

AD-A148 796 INTENSIVE SURVEY OF ARCHAEOLOGICAL SITE 13AN52(U) IOWA
STATE HISTORICAL DEPT IOWA CITY DIV OF HISTORIC
PRESERVATION D W BENN ET AL. AUG 81 DACW41-77-M-1672

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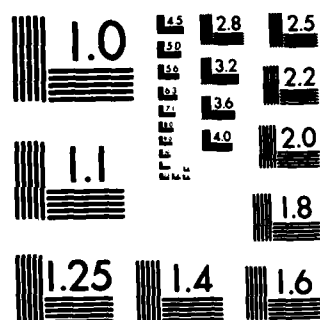
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US Army Corps
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Kansas City District

Rathbun Lake, Iowa
by David W. Benn and
David M. Hovde
August 1981

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Intensive Survey of Archaeological Site 13AN52

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report describes the results of Phase II testing of 13AN52 which is one of 80 prehistoric sites and one of 2 Archaic sites known in the Rathbun Lake area, (was tested by the personnel from the Luther College). Although a burned rock midden and a distinct scatter of lithic waste and chipped stone tools were found, the site was too disturbed to attempt elaborate cultural reconstructions. The report notes that 13AN52 does not meet National Register of Historic Places criteria.		

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INTENSIVE SURVEY OF ARCHEOLOGICAL SITE

13AN52, RATHBUN LAKE, IOWA

by

David W. Benn

and

David M. Hovde

Luther College Archaeological Research Center

(Decorah, Iowa)

A project conducted for the United States Army Corps of Engineers, Kansas City District, by the Division of Historic Preservation, Iowa City, Iowa, under purchase order DACW41-77-M-1672.

July 1981



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PREFACE

"Post-reservoir" archeology is the epitome of intensively localized "dust pan archeology". Managers and researchers struggle to wring-out useful data from sites which have long-suffered losses of integrity and context. The fact that a more sensitive attitude has developed on the part of managing agencies is a significant sign of progress. Attempts by the archeologist to interpret such sites is also progress. For both, however, there remains a hiatus between theory and data. The continuing dearth of theoretical development and synthesis is not progress.

Substantial portions of the last vestiges of important segments of subsistence-settlement systems of the Midwest are in major river valleys under the control of land managing federal agencies. Caring for one's resources in an area of the size of the Rathbun Lake project will be a big job. That it is being attempted, albeit most likely due to legal mandates, is progress and is to the credit of the Corps of Engineers.

Archeologists must, however, develop the theoretical side of their discipline. Site 13AN52 is probably more symptomatic of the reality of site conditions in the area than a unique reflection of it. The interpretation of sites like 13AN52 is a difficult process in serious need of attention; the dearth of regional theory makes this more conspicuous, and it heightens the need for close cooperation between the manager who must be responsible for management and the researchers who must establish the basis for deciding what resources should be managed, how they should be managed, and why.

Adrian D. Anderson, Director
Iowa State Historical Department,
Division of Historic Preservation

Iowa City

ABSTRACT

Archeological site 13AN52 is a Woodland and Archaic site in the vicinity of Rathbun Dam which created Rathbun Lake approximately 1965, partially inundating the site. At the time of the intensive survey of 13AN52 reported here, 79 additional sites were known and 13AN52 was one of two known Archaic sites.

Personnel of the Luther College Archaeological Research Center conducted intensive test excavations and collecting at the site on October 15 and 17, 1978. Anticipating stratified deposits these efforts were rewarded with substantial data demonstrating the site was heavily disturbed as a result of erosion brought about by inundation.

By comparison with other sites in the region the assemblage at 13AN52 is interpreted to represent 1) an intensive and protracted, or consecutive and frequent occupation during the late Archaic period, probably after 1,000 BC; and 2) a short-term occupation during the early Late Woodland period, between 400 and 700 AD.

Although a burned rock midden and a distinct scatter of lithic waste and chipped stone tools were found on the site, destruction of the site is considered too far advanced to attempt substantive cultural reconstructions. The report recommends that 13AN52 does not meet the criteria of significance for listing in the National Register of Historic Places. Observations concerning the mitigation of impacts on other similar sites in the Rathbun Lake area are presented.

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GLOSSARY OF TECHNICAL TERMS

biface: a round oval stone tool formed by flaking on both surfaces; more than one use is suggested by this tool type.

blade flake: a carefully shaped flake removed from a prepared (shaped) core; the blade has a 2:1 length to width ratio, flake scars on the dorsal surface that are parallel to the lateral edges, and a small striking platform showing evidence of roughening and other platform preparation.

burin: a bone working tool formed by removing spalls from a point on a flake to produce a chisel-like working point.

coppice mounds (prairie blisters): natural heaps of dirt resembling small mounds; they contain over-thickened soil horizons, and their origin has yet to be scientifically determined.

core: a block of stone from which flakes are removed; a spent core is a nucleus.

drill: a chipped stone tool with a narrow profile, thick cross-section, pointed tip, and use-wear characteristic of rotation.

knife: a bifacial chipped stone tool with lateral use-wear and resharpening flakes.

pedological: referring to soil genesis and the study of soils.

preform: a usually ovate chipped stone item (bifacially worked) which shows no use wear; assumed to be a blank form for projectile points and other stone tools.

projectile point: a roughly triangular shaped chipped stone tool with a base (notched, stemmed, edges ground) for hafting to a wooden shaft and a sharply pointed tip that shows little or no evidence of use-wear.

scraper: a unifacially worked chipped stone tool probably used for scraping skins or bark and cutting various materials; a side scraper has a lateral working edge, usually low-angled (less than ca. 50°); an end scraper has steep (greater than 50°) flaking on one end to shape the tool for scraping skins.

shatter: uncontrolled flakes that resulted from striking a core.

I

INTRODUCTION

The purpose of this report is to present the findings of and recommendations resulting from an intensive investigation (testing) of 13AN52, a prehistoric site in Rathbun Lake, Iowa. This report is submitted in fulfillment of the specifications of a purchase order between the Kansas City Army Corps of Engineers and the Division of Historic Preservation, Iowa City, with the Luther College Archeological Research Center performing the work for the Division of Historic Preservation. David W. Benn acted as principal investigator for the investigation, which is identified by U.S. Army Corps of Engineers purchase order DACW 41-77-M-1672.

The purchase order was awarded on 22 August 1977, with fieldwork to be conducted the following fall. Due to high water in the reservoir the contracted dates were subsequently amended, and fieldwork was accomplished on the sixteenth and seventeenth of October, 1978. Field personnel consisted of David Benn, supervisor, and crew members David Stanley, Arthur Hoppin, Larry Covington, and David Hovde. Soil analyses were done by Arthur Bettis of Iowa State University.

Following this introduction, the report is divided into seven sections. The first presents an overview of the Chariton River environment. The second part describes the cultural periods of man's prehistory which are apropos to the study area. Following this, the previous investigations in the Rathbun area are reviewed. In the fourth section the research strategy and methodology we utilized to investigate 13AN52 are discussed. The fifth part presents our findings from 13AN52. Included in this part are descriptions of materials and features found on the site, discussion of relationships between certain materials and other sites, and description of soils data. The sixth section contains interpretations derived from the 13AN52 findings and other sites. The final part of the report includes our recommendations for the future disposition of the site, and additionally, some observations concerning the potential for investigations on other similar Rathbun sites.

II

ENVIRONMENT

The Chariton River, where 13AN52 is located, flows through the central Prairie Peninsula (Figure 1). Its headwaters arise in south-central Iowa. The Chariton flows northeastward briefly and then arcs grandly to the south across the Iowa-Missouri border to join the Missouri River in the Big Bend region of central Missouri. In Iowa the Chariton flows through the counties of Clarke, Lucas, Monroe, Wayne, and Appanoose.

In geological terms the Chariton River passes through the eastern slope of the Southern Iowa Drift Plain (Prior 1976:45). This area is characterized by steeply rolling floodplains. Two types of deposits comprise the land surface: 0.3-5.5 meters of Peorian loess of Wisconsin age cover the uplands, while Kansan age glacial till, averaging 36.5 meters in thickness, underlies the loess and covers the bedrock. For our purposes the underlying rock formations can be separated into two groups. To the north of the Chariton River arc is the Cherokee Group composed of carbonaceous shale, clay, siltstone, sandstone, and thick coal beds (Iowa Geological Survey 1969). South of the arc is found the Marmaton Group, consisting of alternating shale, limestone, and coal deposits. The Pleasanton Group, also present to the south of the arc, consists of shale, some sandstone, limestone, and minor deposits of coal.

The four county area around the Rathbun Reservoir has many series of soils derived from prairie, forest, and alluvium. The prairie soils consist of nearly level to moderately sloping mollisols ranging from 0-14% slope. Many of these soils developed in the Peorian loess, although some are found on till. The major soil series of the prairie are Seymour, Edina, Clarinda, Shelby, Adair, Lindley, Haig, and Grundy (Iowa Agriculture and Home Economics Experiment Station 1978).

The forest soils of this regions are predominantly gently sloping to steep with about 2-25% slopes. The majority of these soils developed in pre-Wisconsin till or loess. Lindley and Weller series are the majority types (Iowa Agriculture and Home Economics Experiment Station 1978).

The alluvial soils are nearly level to gently sloping with approximately 0-5% slopes. These soils have developed under prairie in alluvium which Ruhe (1969:161) believes is less than 1,800 years old in the upper Chariton floodplain. The alluvial soils include Colo, Zook, and Nodaway series (Ruhe 1969).

The Chariton River began valley development in the late Yarmouth interglacial (Ruhe 1969:156). The valley is now a mature one with gentle sides, multiple terrace levels, and a broad alluvial floodplain. At some points the Chariton River Valley is over 45 meters deep and 3 kilometers wide. The river has a gentle grade (3mm/meter), substantial breadth (15-30m), and a low, eroding bank (1.5-3m in the upper reaches).

The climate of the project area is characteristic of the Mid-Continental Temperate Zone. There are marked seasonal temperature extremes (range -34°C to 43°C ; ave. 11°C). The average annual precipitation varies from 81 to 97 centimeters with a mean of 85 centimeters. Most rainfall occurs from April to July. The average snowfall of 64 centimeters occurs from November to March (Department of Agriculture 1941:669, 871).

In the early historic period the native vegetation of the Rathbun area varied from prairie on the uplands, to oak-hickory forest on the valley sides and in protected hollows, to parkland-prairie on many terraces, to maple-basswood forest along the river banks. The oak-hickory forest contained many species valuable to prehistoric collectors: white, black, red, burr, and pin oak, shagbark hickory, elm, maple, and some juniper. The riverine forest was composed of silver maple, cottonwood, ash, willow, elm, sycamore, black walnut, and basswood (U.S. Army Corps of Engineers 1975: 2-10; Grantham n.d.:2). As of 1975 sod covered approximately 33% of the four county area which includes the Rathbun Reservoir.

Wildlife of the region is typical of temperate forest species: cottontail rabbit, white-tailed deer, fox squirrel, raccoon, opossum, striped skunk, badger, coyote, and beaver. Other species have been extirpated from the area by modern culture: elk, antelope, bobcat, wolves, bear, and bison (Western Historical Company 1878:323, 335).

Common birds in the region are turkey, quail, bald eagle, short-eared owl, long-eared owl, northern barred owl, great horned owl, screech owl, great blue heron, green heron, turkey vulture, and red-tailed hawk among others. Because the lake coot, blue-winged teal, and woodduck are present, a number of species of gulls, cormorants, osprey, and pelicans also are present. Historically, the prairie chicken also was present (Iowa Conservation Commission 1972).

The project area also supported a variety of fish, reptiles, and amphibians. Aside from the gamefish, which are popular today, the rivers, streams, and oxbow lakes of the flood plain contained a large population of several sucker species, catfish, chubs, and minnows. Reptiles found in the area include the snapping turtle, painted turtle, and a variety of snakes, such as the common water snake, common gartersnake, and timber rattlesnake. The substantial amphibian populations included the mud puppy, tiger salamander, and several species of toads and frogs (U.S. Army Corps of Engineers 1975: 2-12).

That this region supported a tremendous diversity of natural resources for aboriginal populations is without question. This was especially true for the river floodplain where, prior to channelization of the river and field tiling, there was an extraordinary mass of fish, migratory fowl, and plant resources. In addition, the valley and upland oak-hickory forests were optimal habitats for white-tailed deer. At this juncture we may note that the large river valley terraces, where many prehistoric sites and 13AN52 may be found, are strategically situated between the floodplain and the oak-hickory forests.

III

A GENERALIZED PREHISTORY OF THE RATHBUN LAKE AREA

The Rathbun area lies on the western edge of the Eastern Woodlands culture area. There is a tendency among prehistorians to compare culture traits from the Rathbun area with those farther east, particularly with those from the Illinois sequence. This reflects a pervasive belief that the overall trend of cultural diffusion during the late Holocene was from east to west across the Midwest. While the present writer has some doubts about the constancy and strength of this linear diffusion, the present report produces too little new data in precise patterns to offer new or different interpretations. The general culture periods for which there is evidence in the Rathbun area are presented below.

Paleo-Indian (+11,500 to 8,000 B.C.)

The documentation for this period in the project area is very sparse. Other than scattered projectile point finds, only one potential Paleo-Indian site (13AN3) has been recorded (McKusick & Ries 1962:5). The fairly recent alluviation of the Chariton River Valley may be responsible for burying sites of this period in the lowlands, but in large alluvial valleys Paleo-Indian sites may be more common in the adjacent uplands.

The Paleo-Indian cultural tradition was characterized by nomadic bands of hunters and gatherers who may have relied in large part on big game of the Pleistocene. Their technology is recognized by lanceolate projectile points made by sophisticated chipping patterns. Some point types are Clovis, Folsom, Scottsbluff, Agate Basin, Hell Gap, Browns Valley, Plainview, and others. Such points were mounted on a spear or dart shaft for use with the atlatl (spear thrower) as weapons or were mounted on a handle for use as knives. Other common elements of this technology are blade flakes, scrapers, burins, and bone butchering tools. This culture pattern faded with the extinction of Pleistocene mega-fauna.

Archaic (8,000 to 500-1 B.C.)

The Archaic period is represented by the Rathbun area by two known sites. These are 13AN202 recorded by Hoffman (1962:25) and 13AN52, the object of the present study and first recorded by Weichman (1976a:32). The Archaic period cultures apparently relied on hunting and collecting of natural resources, a form of adaptation often termed "primary forest efficiency" (Caldwell 1958).

The technology of this period was more complex in respect to the variety of tools when compared to the previous period. The development of ground stone tools is but one example of the new technology. The deemphasis of big game hunting and the development of a "broad spectrum" subsistence (Flannery 1971) may have contributed to the abandonment of the highly stylized lanceolate point types of the previous periods.

A common subsistence strategy of the Archaic period was seasonal movement from one resource collecting area to another throughout the year. The typical settlement pattern may have been "restricted wandering" or "central-based wandering" (Beardsley et. al. 1956:136,138). Restricted wandering is defined as the pattern of moving throughout a territory, never straying in the same camp for an extended period of time. Centralbased wandering is similar, but the group establishes a base camp for an extended period (i.e. several months?).

Woodland (500-1 B.C. to 1,000 A.D. or later)

In the Rathbun area this period is represented by a total of 21 recorded sites. Twenty are recorded in Grantham (n.d.) and a Woodland component was discovered during our Phase II work on 13AN52. Eight of these sites are single mounds or mound groups. However, 13AN16 appeared on testing by Lionel Brown to be "coppice mounds" or "prairie blisters" (i.e. natural soil accumulations) (Brown 1967:18). The mounds have been excavated by others (cf. Beaubien 1953:64).

The Woodland period ushers in marked social, technological, and ideological changes. The most visible of these are ceramics, small projectile points indicative of the change to the bow and arrow (by the Late Woodland), and earthen mounds. Many of the Woodland culture traits seem to have some from the major cultural efflorescence along the Mississippi and Illinois Rivers. The earliest known Woodland pottery in the Rathbun area is similar to Sister Creeks Punctated, an Early Woodland type in the Illinois River Valley.

Middle Woodland period ceramics from 13AN2 and 13AN6 were identified by Brown (1967:20-21). These were similar to Havana Plain and Naples Ovoid Stamped, with post-Havana pottery similar to Weaver Plain also present. According to Brown (1967:23), earthen mounds found in the Rathbun area reflect influence of ideological and bereavement practices typical of Hopewell, although artifact assemblages found in the mounds are strictly of local manufacture.

Late Woodland sites are underrepresented in the study area.

Weichman (1976a:39) found one triangular point during his survey, and one point was recovered from 13AN52 by the Luther College crew. Late Woodland rim sherds were recovered by the writer from locations A and B upstream from 13AN52 (see "Recommendations" in this report), and the surface collection in the possession of Water Officer Ed Nelson contains triangular points.

Weichman (1976b:11-12) notes that Woodland sites predominate in the archeological inventory of the Rathbun area. He further states that this, rather than indicating a major influx of Woodland peoples, may be a figment of survey techniques.

Mississippian/Historic (1,000 A.D. to present)

The Mississippian period is identified by the coalescence of people into villages with an agricultural economy. In general, a collective ideology was elaborated by status and ritual associated with the agricultural cycle. The centers of Mississippian culture are located along the middle and lower Mississippi River Valley and throughout the southeastern United States. Mississippian influence in various forms penetrated many parts of the Eastern Woodlands and Plains. The prehistoric Oneota of the upper Midwest are one example of Mississippianized peoples. Historically, the Oneota are known as the Winnebago, Missouri, Oto, Ioway, and other tribes (Wedel 1961:119-120).

Although no sites of Mississippian peoples on the Ioway have been recorded in the Rathbun area, Captain Clark, of the Lewis and Clark expedition, mentions an Ioway village at the head of the "Charleton River" in 1804 (Petersen 1941:307). During the early 1800's European disease and the expansion of settlers and their Native American allies caused many tribes to move west. Two such tribes were the allied Sauk and Fox, who drove the Ioway from the eastern half of Iowa by 1825. The Sauk and Fox in turn were removed from the Rathbun area by treaty with the United States government in 1843 and out of Iowa by 1845. County historical records, such as the Atlas of Appanoose County (Anonymous 1902), and the History of Appanoose County (Western Historical Company 1878), indicate the presence of both the Ioway and the Sauk and Fox in the Rathbun area during historic times.

The earliest European/American intrusions into the study area are not yet documented. Evidence of traders/explorers being in the area is represented by scattered comments about the area in period literature. Victor Collin de La Harpe visited the Rathbun area in 1796 in his book, "A Journey in North America, Vol. 1."

Perrin du Lac included the "Charleton River" on his map of 1802, and Lewis and Clark mention the "Charleton River" in "The Original Journals of the Lewis and Clark Expedition," of 1806 (Petersen 1941: 306-307).

Significant American expansion into the Rathbun area began with the first official American military expedition in 1832: a unit of dragoons was to lay a trail from Rock Island to Fort Leavenworth, Kansas. The first known white settler was Ewen Kirby, who operated a trading post in the south-central part of Appanoose County. He stayed only two years. The first permanent settler was Col. James Wells, who built a farm near Centerville in 1840. The first permanent business was a sawmill built in 1845 (Anonymous 1902).

IV

PREVIOUS INVESTIGATIONS

Archeological fieldwork began in the Rathbun area with a preliminary reconnaissance survey of the original proposed dam area by Richard P. Wheeler in December of 1948. Since that time six other survey and testing projects have been conducted in the reservoir area: McKusick and Ries (1962), Hoffman (1965), Brown (1967), two by Weichman (1976a & b), and the present study in 1978. As of 1977 a total of sixty-eight prehistoric sites were recorded in the Rathbun Reservoir on property managed by the U.S. Army Corps of Engineers, and twelve were recorded in contiguous areas (Grantham n.d.:3).

Wheeler's survey (1949) covered the original proposed dam site and nine miles upstream from that point. His survey resulted in the recording of 13AN1, the Rosencrants mound group. Other sites were noted, although were not visited, and information was gathered from local informants.

The next survey took place in 1961 and 1962 under the direction of McKusick and Ries of the Office of the State Archaeologist. Their work consisted of weekend surveys and interviews with local informants. The bulk of the known Rathbun area sites were recorded at this time: 36 in Appanoose County, 14 in Wayne County, and 9 in Lucas County, for a total of 59 sites.

The Missouri Basin Project of the Smithsonian Institution resurveyed the Rathbun area after the Corps of Engineers redesigned the plans for the reservoir. Some testing also was accomplished. Twenty-two previously reported sites were revisited, and seven new sites were located (Hoffman 1965).

In 1967, Lionel Brown tested a number of recorded sites, following the recommendations proposed by Hoffman (1965). Brown (1967) tested five mound sites and five occupation sites. This was the last archeological fieldwork before the Rathbun dam was completed.

Weichman (1976a & b) conducted two surveys around the Rathbun dam area for the Corps of Engineers. Thirteen new sites were recorded, including 13AN52, the object of the present study.

Previous to the present study, Larry Grantham of Northeast

Missouri State University developed "A Preliminary Management Plan for Cultural Resources--Rathbun Lake, Iowa" (n.d.) for the Corps of Engineers, Kansas City District. This work was intended to initiate the on-going process of assessing cultural resources in and around the Rathbun Lake Project.

The sum total of past investigations in the Rathbun area is that over 70 prehistoric sites have been discovered. A few of these have been excavated, but the results of excavation have been spotty and not especially informative (e.g. Brown 1967). No controlled surface collections have been made on plowzone sites, and no large, undisturbed habitation sites have been excavated. In other words, systematic archeological research yielding anthropological relationships is the next procedure to be undertaken on the cultural resources of the Rathbun area.

In the realm of cultural resource management all previous investigations have fallen under this rubric. Each successive investigator has assessed the known cultural resources and presented recommendations for the mitigation of impacts on sites. The culmination of recommendations for the management of cultural resources came in the plan provided by Grantham (n.d.).

V

RESEARCH STRATEGY AND METHODS

The Luther College field party conducted Phase II investigations on 13AN52 on the sixteenth and seventeenth of October, 1978. This project was supported by the U.S. Army Corps of Engineers, Kansas City District, and the Division of Historic Preservation, Iowa City, Iowa. Test excavation of 13AN52 was recommended by Weichman (1976a), who located the site by survey. The goals of intensive survey of 13AN52 was two-fold: 1) to determine if the site has potential research value and thus may be eligible for nomination to the National Register of Historic Places; 2) and to investigate the nature of the pedological context of the cultural deposit.*

In order to attain the above goals there were three objectives in the investigation of 13AN52. The first was to delineate the site limits, both vertical and horizontal. This was accomplished by surface collecting the site utilizing a control grid and by probing the subsoil with test excavations and a hand auger. The second objective was to determine if materials in the site were still in context, and, therefore, would provide research value for future intensive investigations of the site. Such findings are the contingency for the determination of significance. The third objective of the 13AN52 work was to place the site assemblage within the known regional and cultural contexts. We believed that the site would yield information about the local cultural sequence, aboriginal settlement patterns, and prehistoric utilization of the regional environment. Additionally, it was hoped that evidence for the depositional context of the cultural deposit would be intact, and that the findings from 13AN52 would be applicable to other sites in the Rathbun Reservoir.

Since the site lies approximately 1 m lower than the normal pool elevation of the reservoir, it was necessary to delay field investigations until the fall of 1978 when a lower pool level could be achieved (see Plate 1). When the site became available for the study, the following methodology was employed to remove materials from the site.

- 1) A grid system, consisting of 10 x 10 m squares oriented

* This proposal stems from Weichman's (1976b) discussion of the potential for buried sites in the alluvium of the Chariton River basin.

to the cardinal directions, was established over the entire surface of the site from the water line on the beaches to the base of the dam. All cultural material was collected from each control square. Broken cobbles (fire-cracked?) in each square were counted and left on the site.

- 2) Five non-contiguous, 1 x 1 m test squares were excavated in 10 cm levels to sterile soil. Test squares were situated at 20-30 m intervals so that all parts of the site were tested. One square, number 5, was located to investigate feature 3. One meter test squares were used instead of 2 m squares, as called for in the scope of work, because deep probing in this deflated and disturbed deposit was needed more than opening 2 x 2 m blocks in a search for features. Excavation was by shovel-skimming until cultural material was encountered; then hand trowelling was employed. Excavation was carried to the C soil horizon in all squares, this depth ranging from 40 cm in squares 3 and 5 and up to 112 cm in squares 1, 2, and 4.
- 3) Six cobble features on the surface were investigated. All were mapped on the control grid, and two features (#2,3) were dissected to determine if anything remained of their context.
- 4) Soil descriptions from two test pits which produced cultural material in situ were completed by Arthur Bettis. A hand soil auger was employed to probe the deposits below that exposed by excavation in all test squares.
- 5) A boat trip was made to reconnoiter other sites at the upper (northwest) end of Rathbun Reservoir. This trip was made to examine other sites potentially similar to 13AN52. The results of this effort are described on pages 7 and 28 of this report. (Also see Figure 11).

VI

ANALYSIS OF THE 13AN52 ASSEMBLAGE

The Setting

13AN52, now covering about 100 x 140 m, is situated on the eastern side of the Chariton River Valley (Figure 2). This terrace is part of a divide which was created by the down-cutting of the Chariton River and a tributary stream, Buck Branch. This location is in the SW $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 25, R18W, T70N, Appanoose County, Iowa. At present the site is situated at the base of Rathbun Dam (on the lake side). 13AN52 is completely inundated at full flood pool (282.2 m above m.s.l.) and partially inundated at normal pool level (275.5 m above m.s.l.). At the time of our investigations the site stood approximately 1 m above the water, which was at 274.7 m.

The Chariton River floodplain is quite young. Ruhe (1969: 161) estimates it to be 1,800 years old. The floodplain, before impounding of waters, was relatively level and criss-crossed by a sinuous Chariton River channel, oxbow lakes, and abandoned meander channels. The river has been down-cutting for centuries, and in the spring it would flood over the terraces, depositing alluvium throughout the valley. Thus, the prominence of the terraces in their present condition is somewhat illusory. Prehistorically, the river and its associated wetlands would have been more immediate to the terrace where 13AN52 is located.

The soils on the 13AN52 terrace are composed primarily of Olmitz loam (see Figure 3; USDA Soil Conservation Service 1977: 51-2). This soil is generally found on footslopes with 2-5% grade and near the mouths of upland drainage ways. The parent material consists of glacial till and alluvium overlying aggregated alluvial deposits. Representative soil descriptions, as exposed in the Luther College test pits on 13AN52, are described below. Soil descriptions utilize standard terminology (USDA 1951). Descriptions are included below. The maximum depth of the lower most soil horizon was not determined in most cases but the maximum depth to which the description is known to apply is the maximum depth indicated in each description.

Soil description: test square #1 (4-5N/0-1E) and test square #3 (30-30S/0-1E). (See Figure 5 for locations of test squares).

Surface layer 0-15 cm, sand and laminated clays, sandy loam, redeposited by water on beach, structureless (10YR3/2), very dark grayish brown.
 abrupt smooth boundary.

test squares #1,3 (Cont.)

- B1 15-26 cm, clay loam, blocky structure with thin continuous gray-brown cutans (10YR4/2), dark grayish brown.
gradual smooth boundary.
- B21 26-44 cm, clay loam, strong medium blocky structure with very faint cutans, (10YR4/2), dark grayish brown, contains artifacts and charcoal flecks.
gradual smooth boundary.
- B22 44-55 cm, clay loam, weak moderate columnar breaking to strong moderate blocky structure, fine rootlets, (10YR4/4), dark yellowish brown, thin and discontinuous gray-blue cutans (5YR6/1).
gradual smooth boundary.
- B3 55-75 cm, loamy gray, medium moderate subangular blocky structure (10YR4/3), dark brown, few faint gray cutans (5YR6/1) and chemical stains.
abrupt smooth boundary.
- C1 75-90 cm, clay loam grading to sandy clay loam, very weak subangular blocky structure to structureless, extensive chemical staining.
gradual smooth boundary.
- C2 90-+112 cm, loamy sand, massive structure, laminated chemical stains, clay coats on sand grains (5YR6/1) gray (clay coats resulting from standing water--i.e. reservoir impounding).
soil boundary unknown depth below 112 cm.

Soil description: test square #2 (10-115/30-31E):

Same as test square #1 except:

Surface layer 0-8 cm, redeposited in sand and clay.
abrupt smooth boundary.

- A3 8-13 cm, clay loam with some redeposited sand (slight disturbance), medium fine subangular blocky structure (10YR3/2), very dark grayish brown, thin dark cutans on horizontal ped surfaces.
cultural material on abrupt smooth boundary.

test square #2 (cont.)

B1 13-27 cm, weak fine platy grading to weak fine blocky structure, clay loam (10YR4/2), dark grayish brown.

Soil Description: test square #4 (20-21S/50-51E)

Same as test squares #1, 2 except:

A2 9-18 cm, clay loam, medium moderate platy structure (10YR3/2), very dark grayish brown.

Test square #5 contained a C horizon profile.

The Assemblage

A total of 3,070 prehistoric items was recovered from 13AN52 by the Luther crew. The collection breaks down into 8 groups of material (Figure 5) and fire-cracked rock (Figure 4). The 8 groups are: chipped stone tools and tool fragments, 81; cores and core nuclei, 31; flakes (utilized), 2,685 (630); chert shatter, 253; cobbles, 11; maul, 1; hammerstones, 7; body sherd, 1. The assemblage is described in more detail in the following pages. Here, the chipped stone material has been divided into 13 categories for analytical clarity. Unless noted otherwise in the category descriptions or the Glossary of Terms the characteristics for defining the categories are contained in White (1968).

Chipped Stone

Category 1: Stemmed projectile points and scrapers (0-10N/0-10E), (20-30N/10-20W), (20-30N/10-20W), (0-10S/30-40E), (30-31S/0-1E).

This type consists of five examples (Figure 7 d, e, f, i), all of which are heat-treated white chert. All examples consist of the base and a small portion of the blade. One specimen is broken, while the other four have been resharpened and utilized as end scrapers. The basal edges of two examples show evidence of rounding and smoothing typical of wear resulting from rubbing on the hafting element. Projectile point bases of a similar type appear at Modoc Rock Shelter about 6,000 B.C. and reach greatest popularity between 2,500 and 1,500 B.C. (Fowler 1959:37). A projectile point (A:C) from the Foss site (23RA271) also has a similar base shape (Hunt 1976:46). The Foss site is a multi-component manifestation in the Cannon Reservoir, Missouri, and contains a Middle Archaic occupation dating approximately 7,000 to 5,000 B.C.

measurements	range (cm)	average (cm)
length	n.a.	n.a.
blade length	n.a.	n.a.
tang length	1.36-1.64	1.5
shoulder width	1.90-2.25	2.03
tang width	1.45-2.25	1.88
base width	1.10-1.60	1.44
maximum thickness	.18- .78	.45

Category 2: Stemmed projectile point (10-20S/10-20W).

This point is nearly complete except for the missing tip and an uncertain amount of resharpening on the base (Figure 7 h). It is made of heat treated whitish-red chert. It is impossible to determine if this specimen is a side notched point or has a straight, squared tang. The former morphology would make it akin to the next group, Category 3. A similar specimen was found in a Middle Archaic context at the Foss site (Hunt 1976).

measurements	range (cm)
length	n.a.
blade length	n.a.
tang length	1.08
shoulder width	2.49
tang width	2.04
base width	1.91
maximum thickness	.85

Category 3: Side notched projectile points and scrapers
(0-10N/10-20W), (0-10N/30-40E), (30-40N/30-40W),
(0-10S/20-30W), (10-10S/30-40W).

This group includes 5 points (Figure 6 a-e) made of gray, red and gray chert, and Tongue River silicified sediment. Three of the specimens have been resharpened into end scrapers. Weichman (1976a: plate 1) illustrates a similar point found on 13AN52 during his Phase I investigation. Small to medium, shallowly-side notched points like these are similar to the type, Madison side-notched, a Late Archaic artifact type in the upper Midwest (Ritzenthaler 1967:26).

measurements	range (cm)	average (cm)
length	3.85 (one)	n.a.
blade length	2.76 (one)	n.a.
tang length	1.00-1.20	1.13
shoulder width	1.95-2.40	2.24
tang width	1.94-2.56	2.30
base width	1.70-2.36 (two)	1.99
maximum thickness	.20- .85	.52

Category 4: Side notched projectile point (0-10N/20-3W)

This small point has a convex base and a broken (Figure 7 a). Its made of heat-treated white chert, and the flaking is primarily lamellar. Diminutive notched points of many forms, such as this one, are a horizon marker for the late Woodland Period throughout many portions of Iowa and adjacent states and are sometimes termed Koster points.

measurements	range (cm)
length	n.a.
blade length	n.a.
tang length	1.29
shoulder width	1.85
tang width	1.83
base width	1.78
maximum thickness	.63

Category 5: Stemmed projectile point (0-10N/10-20W).

This small point has a triangular blade with the tip missing and a blunt stem (Figure 7 b). It is made of whitish-red, heat-treated chert. Small stemmed and corner notched points appear on other sites in the Chariton River Basin, for instance see Weichman (1976a: plate 3). Such point forms may be typical of the early Late Woodland period in this region.

measurements	range (cm)
length	n.a.
blade length	n.a.
tang length	.54
shoulder width	1.70
tang width	1.15
base width	-
maximum thickness	.54

Category 6: Triangular projectile point (0-10S-0-10E)

This small, unnotched point is made of heat-treated, fine, gray chert (Figure 7 c). It does not appear to be an end scraper. Triangular points, a Late Woodland type, are not common in the Rathbun area. Weichman (1976a:13) found one on 23PT6, and a few were seen by the writers in collections of local residents. The late prehistoric occupations in this area are largely unknown, but collector bias, site burial, or cultural behavior of the prehistoric populations could account for this point type being uncommon.

measurements	range (cm)
length	1.88
base width	1.48
maximum thickness	.98

Category 7: Knife blade (10-20S/10-20W).

This large biface is broken at the base, thus denying absolute identification (Figure 6 h). However, the blade has been resharpened at some points along the edges, suggesting differential use-wear on those edges. The specimen is made of white chert. Similar forms (Munkers Creek Knife) have been found on the Coffey site, a middle Archaic manifestation in northeastern Kansas (Schmits 1978: 114). Only a few measurements are available: blade length, 6.50 cm, ("hafting" portion is broken); shoulder width, 2.30 cm; thickness, 1.25 cm.

Category 8: Knife bases (0-10N/0-10E), (20-30S/10-20W).

Two broken implements with blunt, rounded ends are probably knife bases (Figure 6 f, g). Both are made of lustrous chert. One is white and the other is salmon-brown. They are .9 cm and .7 cm thick in cross-section respectively. This knife form may be similar to ones found at the Collins site, 23MN223, an early Woodland site in northeast Missouri (Klippel 1972:72).

Category 9: End scrapers (0-10N/0-10W), (0-10N/0-10E), (10-20N/0-10W).

End scrapers are common throughout the Midwest and are found in sites dating from Paleo-Indian to Late Woodland. The three specimens from 13AN52 (Figure 9 a-c) are made on flakes with unifacial retouch on the dorsal surface. One is made of gray, fossiliferous chert, while the other two are made of red and white chert. They range in size from 2.90-3.97 cm in length, to 1.94-2.54 cm in width, to .80-1.15 cm in thickness. All three are crudely formed and little utilized.

Category 10: Side scraper (20-30N/40-50W).

This scraper (Figure 9 d) was formed by unifacially retouching (on the dorsal surface) the lateral edges of a broken flake. It is made of coarse white chert. Its size is 3.60 cm by 3.16 cm and is .85 cm thick.

Category 11: Bifacial tools (10-20N/10-20W), (0-10S/10-20E), (0-10N/30-40E), (0-10S/0-10W).

This group of 4 tools (Figure 8 e-h) have an ovate form and probably were multi-functional. Each retains evidence of the flake it was made on; the dorsal flake surface has been completely shaped by flaking, while the ventral surface was only partially retouched. The lateral edges have been shaped and resharpened for cutting functions. The distal and/or proximal ends show evidence of having been utilized for scraping. Two of the specimens are made of pale gray chert, one is a fine pink chert, and the last is made of Tongue River silicified sediment. The average size is: length, 4.24 cm; width, 2.24 cm; thickness, 1.08 cm. Similar tools were found at the Collins site (Klippel 1972: 73) and the Coffey site (Schmits 1978:115).

Category 12: Drills (0-10S/30-40E), (0-10N/0-10W), (0-10N/0-10E), (20-30N/30-40W), (0-10S/0-10W).

This category of 5 examples (Figure 8 a-d) includes only broken artifact with thick cross-sections (no working ends). One drill has an expanding base, while the other is parallel-sided. Four of the drills are made of white and red cherts. Another is made of pink quartzite. The drill is a ubiquitous tool in the Midwest during much of prehistory. Two drills were found on 13AN52 by Weichman (1976a: plate 1).

Category 13: Preforms (0-10S/0-10W), (0-10S/10-20E), (0-10S-10-20E), (10-20S/20-30W).

This category includes 4 specimens (Figure 7 g) which are core nuclei with additional lateral shaping in the form of bifacial flaking and use-wear. Three are broken transversely, but their original shape may have been ovate-rectangular. Two are made of coarse pink chert, and the other two are made of pink quartzite.

Chipped stone tool fragments:

This large category of 37 specimens includes all fragments of chipped stone tools too small to place in a typological group. Represented in this group are drills, scrapers, points, preforms, unfinished tools, and other pieces of unknown function. A wide range of materials is

represented in this group--all types of chert (local and imported) and quartzite mentioned above as well as other material not described.

That this category of miscellaneous fragments exists is actually a reflection of the entire chipped stone inventory from 13AN52. The incidence of tools which have not been reworked is very low; indeed almost every piece has been reshaped and resharpened, some to an extreme degree as, for instance, the stemmed and notched scrapers (categories 1 and 3).

Maul (4-5N-0-1E) 27 cm depth.

A ground maul (Figure 10) was found in test squares #1 at 27 cm depth. This object is made of red granite which is pitted and crumbly as if it had been burned. It is 9.04 cm long, 7.10-4.60 cm wide, and the shallow, full groove is set 4.99 cm from the pitted (working?) end. Mauls are quite rare in southern and eastern Iowa, but are much more common in northern and western Iowa. Mauls from Appanoose County are, however, noted by Wheeler (1949) in his field notes of December 15, 1940.

Pitted hammerstones: (10-20N/20-30W), (30-40N/30-40W),
(30-40N/40-50W).

These are hand-sized, smooth basalt cobbles with one (2 examples) or two (1 example) shallow depressions packed into the flat surface of the stone. Some of the lateral edges of these stones also are battered. The term "nutting stone" is sometimes used for these items, although their function(s) are not empirically demonstrated. This artifact is present in the Archaic levels of Modoc rock shelter (Fowler 1959:28).

Hammerstones: (0-10N/0-10W), (0-10N/10-20W), (10-20N/20-30W),
(20-30N/10-20E), (20-30N/30-40W).

This group consists of hand-sized cobbles of basalt which have heavy edge abrasion. They have not been purposely shaped and appear to have been utilized in an expedient manner. The cobbles for these tools are presumed to have been obtained from local deposits of glacial till or outwash.

Ceramics: (0-10N/0-10E).

A single, water-rolled pottery sherd was recovered from the surface. This is a buff colored, sand and grit tempered sherd of approximately .9 cm in thickness. It is only possible to place this item in the Woodland component.

Lithic debitage:

Our investigations recovered 31 cores and core nuclei, 2,685 flakes of which 630 showed use-wear or retouch, and 253 pieces of chert shatter. For the most part the flakes and cores are made of fine grained, heat-treated cherts with white, pink, and red coloration. Almost all flakes are thumbnail sized or smaller, and were removed by percussion with a soft billet (e.g. antler or wood) or by pressure flaking methods. Shatter consists of small, angular fragments of chert which spall away during the flaking process. All of the cores and core fragments are small and multifaceted.

Fire-cracked rock: see Figure 4.

The surface of 13AN52 was littered with broken and crumbling cobbles of hand size. Six features were composed of the same material. These cobbles were made of granite, basalt, and other igneous rocks--types available in local tills. Because the landscape has glacial till as one of the major components, we cannot be sure that all of the broken rock on 13AN52 has a cultural origin. However, the distribution of broken rock corresponds closely with that of the lithic debitage and tools, suggesting that all of the rock on the site is culturally significant.

Rock Features

Six concentrations of fire-cracked cobbles on the surface of 13AN52 appear to be aboriginal features. All are in the northern one-half of the site, and five are in the northwest quadrant (Figure 5). The features have been exposed by deflation of the soil surface due to the erosional activity of impounded waters. Features 1, 2, and 3 have been deflated in situ, but three other concentrations have been scattered by beach erosion. Features 1, 2, and 3 were cross-sectioned by excavation, but they proved to be in sandy (recent) deposits (Plate 2).

Feature #1 (0-10N/10-20E) consisted of a group of cobbles, 10 complete and 4 fragmentary. Most of the rocks were fire-cracked and/or battered.

Feature #2 (Plate 2) was situated between 19-22N, 20-22W. This feature was a ring of over 200 whole and fragmentary, fire-cracked cobbles, piled 2-3 deep to form the ring with virtually none in the center of the ring. The ring had a diameter of 1.5 m.

Feature #3, located near #2 and nearly contiguous with it (22-24N/20-25W), was a pile of about 100 cobbles and fragments with another

ca. 100 cobbles and fragments scattered around the pile. Three other features, not given numbers, appeared to be piles of fire-cracked cobbles and fragments numbering approximately one to seven dozen.

No unusual concentrations of chipped stone tools or lithic waste were found around the stone features; indeed, lithic debris was conspicuously lower near the features.

Test Excavations (see Figure 5)

#1: (4-5N/0-1E)

This square yielded three artifact bearing levels. One red chert flake was recovered from the redeposited sand at 12 cm. The grooved maul and 3 red chert flakes were recovered from the B1/B2-1 soil boundary at approximately 27 cm depth. In the B2 horizon at approximately 32 cm one red chert flake, one quartz flake, and a retouched core were recovered. No evidence of cultural features was seen in this excavation, although scattered flecks of carbon were noted throughout the A and upper B horizons. An iron pipe was buried in the southwest corner of this square and left exposed on the surface to provide a reference point for future work.

#2: (10-11S/30-31E)

The only materials from this square were recovered from the 5-12 cm level (A3 soil horizon). Hundreds of red and white microflakes and a biface fragment were found along the west edge of this square. Perhaps this represented a chipping station (Plate 3). A 4 liter soil sample from this level was processed by flotation and produced 94 microflakes, many fresh seeds of local weeds and grasses, and carbonized walnut shell fragments. No other cultural material was found in this square. The sub-soil was probed with a hand auger, and aggregated sands were found to underlie the loamy soil at the surface. A pipe was left here as a reference point for future investigations.

#3: (30-31S/0-1E)

The native soil had been eroded down to the B3 horizon in this portion of the site. No cultural material was found in situ, although a stemmed scraper, one cobble and 9 fragments, 5 pieces of shatter, and 5 flakes were found in the redeposited sand of modern origin.

#4: (20-21S/50-51E)

The native soil profile was found to be largely intact in this portion of the site. One piece of shatter was found in the 0-10 cm level, and 4 flakes were found in the 20-30 cm level. This square may have been situated on the east edge of the site.

#5: (21-22N/23-24W)

This square was situated between features 2 and 3 so that #3 could be cross-sectioned. The native soil was eroded into the B2-2 horizon. No cultural material was found in context, although 11 flakes and 2 pieces of chert shatter were found in the redeposited sand. This square was excavated to 50 cm depth.

VII DISCUSSION

13AN52 is a damaged and disintegrating site! Ordinarily, this section of an intensive survey report would be given over to analyzing intra-site relationships and constructing culture patterns. Instead, many actions have so disturbed the site as to abrogate the possibility of studying the relationships among material scatters. We are left with collecting the pieces and presenting them here to assist future investigations on similar sites in the Rathbun area.

Some types of aboriginal remains in 13AN52 have been destroyed by natural actions in the soil. No bone or shell remains were found on the surface or in the excavations, but we believe such materials were once present. The soil on the site is acidic (pH 5.9). Little carbon was seen in the excavations, suggesting that the periodic inundation and exposure of the site, due to fluctuating impoundment levels, has dissolved some of these remains.

The most significant disturbances, by far, have stemmed from the construction of the dam, impounding of waters, and exposure of culture bearing layers at the surface. The site was over-run by earth moving machinery during construction, and unknown parts of the site may have been removed or compacted by these activities. Inundation of the site has modified the soil chemistry to an unknown degree, softened the upper soil layers and exaggerated erosion, and deposited layers of silt and sand over the surface. The fluctuating water level has created cut-faces on 3 sides exposed to the lake and has removed the A and upper B soil horizons from the western one-half (i.e. west of 0/0; Figure 5) of the site. So serious is the erosion on the northwest portion of the site--where the rock features are located--that it is impossible to confidently relate the fire-cracked rock scatter with the scatters of lithic waste and chipped stone tools. The remaining destructive factor, that of amateur collecting on the site, has been facilitated by the rapid exposing of the site and by the ease of access to this and other sites in the reservoir (cf. Grantham n.d.). It is safe to estimate that 25-50% of the diagnostic artifacts, i.e. projectile points, have been removed and are not available for study.

Intra-site Patterning

Despite the problems of disturbance and missing portions of 13AN52, there is a general dichotomy in artifact distribution

(see Figures 4 and 5). Cobbles and fire-cracked rock are concentrated in the northwest quadrant on the surface, while other portions of the surface scatter contain either sporadic occurrences of such rock or none at all. Five of 6 rock features are in the northwest quadrant. On the other hand, while lithic debitage and chipped stone tools are found everywhere on the site, the largest concentrations of these materials are in areas south and east of the higher densities of rocks. (Densities of lithic debris and tools are somewhat lower on the east and southeast portions of the site due to greater depths of redeposited sand which covered prehistoric materials).

The general density of rocks and the rock features are reminiscent of the burned rock midden at the Indian Creek site in Real County, Texas (Shiner and Shiner 1978). This site was covered with burned rock and contained several "ovens." Ovens are cobbles and slabs piled around foods to be cooked, after the rocks have been heated in a fire. When the cooked foods and other materials were removed, the rocks were left distributed in a ring. The authors speculate that not only the rock rings but all of the rock on the site may have been a by-product of similar activity. In another study of burned rock middens Kelly and Campbell (1942:322) state that burned rock middens were not intentionally constructed and therefore are not considered cultural traits. Rather the middens are by-products of behavior related to hearth construction and utilization.

The 13AN52 rock midden is not nearly as dense as those to be found in Texas, but the morphology appears to be the same. We may also infer that the function of the rocks was the same. We would differ with the authors quoted above concerning the rocks as a cultural trait. Not only is the use of large numbers of rocks a cultural trait, but the disposal patterns of rock reflect regularized patterns of human behavior. While wide-ranging site surveys are lacking for southern Iowa, it is our impression that many sites in that region contain large quantities of rock (cf. Benn 1978). This is not the case for sites in northeastern and northcentral Iowa, where fire-cracked rock is scarce.

The highest densities of lithic debitage and chipped stone tools do not correspond to the distribution of the rock. Flakes and chipped stone tools are concentrated along the crest of the terrace, i.e. along the east-west zero line of the site grid. Additionally, the density of flakes in the area of the rock features is substantially lower than along the terrace crest.

Hammerstones are found primarily in the northwest quadrant

of the site. This is the area of the rock concentrations. Perhaps it can be inferred that hammerstones were utilized in conjunction with the burned rocks in cooking procedures.

In the analysis of the assemblage from 13AN52 it was revealed that an Archaic and a Woodland component are present. Archaic projectile points were found over all parts of the site, but the 3 Woodland points were found near the center of the site grid.

The remaining noteworthy pattern is the chipping station excavated in the eastern portion of the site. Profuse amounts of microflakes were found on the surface in squares around this station.

Culture Patterns

This is a multi-component site, and only a dozen projectile points and one pottery sherd out of the total of more than 3,000 pieces can be identified with a particular culture period. The Archaic component(s) is identified through intra-site comparisons with other sites of Middle Archaic, Late Archaic, and Early Woodland period ages. Nearly all of the 13AN52 artifacts are small, leading us to speculate that this is a late Archaic component. We would place it after 1,000 B.C. The Woodland component is identified by a small stemmed point, a notched point, and a crude triangular point. The eroded pottery sherd is undatable. We would place these point forms in an early Late Woodland context, ca. 400-700 A.D.

From the predominance of diagnostic Archaic material and the paucity of Woodland remains, we speculate that the Archaic occupation (s) were either intensive and protracted or consecutive and frequent. The Woodland presence seems to have been short-termed. Many of the broken chipped stone tools have characteristics similar to those found on complete Archaic specimens, indicating that much of this material also belongs with the earlier component. Likewise, the burned rock midden probably belongs with the Archaic manifestation, if we can rely on relative densities of artifacts.

The dichotomy between the burned rock midden and the debitage/tool scatter seems to argue that the Archaic component represents a single occupation, for people returning to a site would not necessarily reoccupy it in the same way leaving the same discard patterns. The area of the burned rock midden could have functioned as a resource processing and cooking locus, while the portions immediately south and east of the rock features would have been used for sitting, crafts, and sleeping. From the variety of tools and high density of lithic debris on the site, it is assumed that most activities associated with the life functions of human beings were pursued at this location, depending on the season of occupation.

VIII

RECOMMENDATION AND FUTURE RESEARCH

There were two reasons for investigating 13AN52. Our foremost motivation was to evaluate the site in terms of the criteria of significance for nomination to the National Register of Historic Places. This was recommended by Weichman (1976a). And, whether or not the site was found to be significant, these investigations yielded information useful for pursuing other archeological studies in the Rathbun Lake Project area.

In the foregoing analysis 13AN52 is presented as a multi-component site with potential intra-site patterning. Our analysis of the cultural patterns was brief, with the majority of the report being given to descriptions of materials and the setting. No modelling of human behavior patterns was attempted. To pursue our analysis beyond the level of this report would be counter-productive, since the site has been extensively disturbed by a variety of agents.

disturbances:

- beach erosion on 3 sides of the site
- the Rathbun dam resting on the remaining intact side
- recent alluvial sand deposited over the eastern one-third of the site
- extensive modification of the local setting and removal of the local context as a result of dam construction and lake inundation
- limestone rip rap scattered over southwestern portions of the site
- a substantial (albeit written) history of amateur collecting on the site
- naturally acidic soils, which have destroyed the uncarbonized organic remains
- collapsed natural soil stratigraphy on the western one-half of the site

These are the most obvious impacts which have lessened the integrity of the cultural deposit. To salvage the cultural information remaining at the site, for instance in situ cultural horizon(s) at the east end of the site, these and any other impacts would have to be evaluated. More importantly, however, means would have to be found to compensate for or reconstruct information which has been lost due to impacts.

We believe that too much information has been lost from 13AN52. To compensate for lost data, the entire remaining portion of the site would have to be excavated. There would be no

guarantee that this approach would yield significant results, and the cost would be prohibitive given such risks. We perceive that the most significant information has been removed from 13AN52, and we recommend that no additional archeological research is warranted.

Substantive data was obtained from 13AN52 to be used in formulating a plan for mitigating the impact of cultural resources throughout the Rathbun region. The goals of evaluating all cultural resources in the Rathbun impact zone have been addressed by Weichman (1976b:75-77) and Grantham (n.d.). They call for an intensive survey of the pool's "bathtub ring" as well as adjacent upland areas and properties below the dam. In addition, they stress the need for a long-term management program to assess the dynamic impacts of the fluctuating pool level on archeological sites. Nowhere in the Rathbun Reservoir is there a site better epitomizing the need for management than 13AN52. There are other sites where immediate investigation and future management can cancel the destructive impacts which have ravaged 13AN52. From our experience we can propose several research problems.

- a) 13AN52 may be representative of many other sites on large terraces. The Archaic component appears to have been an extended habitation (i.e. base camp), while the Woodland component is more ephemeral. This interpretation differs from one suggested by Weichman (1976b:81), who see the cultural situation as the reverse relationship, but the discrepancy is important only because it argues for the need to have a comprehensive evaluation of cultural resources in the region. The potential contrast between Woodland and Archaic components on the same landform suggests a change in the subsistence/settlement patterns between these two culture periods.
- b) The pool elevation in Lake Rathbun fluctuates as much as 3-4 m in a given year. This is the most important impact zone for archeological resources, since this fluctuation zone rests at the same elevation as virtually all of the terraces along the Chariton River. Hundreds of sites like 13AN52 are located on these terraces. Sites at the lower end of the lake have been seriously eroded by wave actions, but sites at the upper end of the lake are only beginning to be eroded by the fluctuating pool level. The Luther crew in the company of Water Officer, Ed Nelson, visited two unnumbered sites (A and B in Figure 11) which are now appearing because of erosion. On each site well preserved Late Woodland ceramics were picked up, and an abundance of fire-cracked rock and lithic debitage littered the beach. Perhaps eroded sites in the lower lake area would require testing and possibly salvage,

but sites in the upper lake area may be intact and valuable as research tools.

- c) 13AN52 yielded evidence of in situ cultural horizons at the A3/B1 and B1/B2 soil boundaries. Other sites we visited (A and B, Figure 11) also showed evidence of 30-40 centimeters of overburden. This overburden is sufficient to have insulated the cultural deposits from disturbance due to plowing. Thus, cultural materials probably will be found in context on such sites, and multi-component sites may have stratigraphic integrity.
- d) The burial of sites on Chariton River terraces has occurred primarily by alluviation. Long-time residents of the area remember the Chariton River flooding the entire valley during years of great floods. Not only is there a strong potential for locating buried sites in the upper Chariton Valley, but the paleo-environment of the region may be recorded in the valley deposits. It is imperative that comprehensive evaluation of cultural resources in the Rathbun area be integrated with a complete geomorphological assessment of the area.
- e) An evaluation of cultural resources in the upper Chariton River would contribute significant information to a cultural-historical record of the local area. Furthermore, the completion of such a study would have significance throughout the central Prairie Peninsula, for the cultural record of the Chariton is intimately linked to that of Illinois and the lower Missouri River region. As an example, evidence for the use of burned rocks at 13AN52 falls in line with similar findings from other sites, raising the specter of identifying a broad culture pattern.* We have a head start understanding these regional linkages because a number of similar cultural studies in this region are already well advanced. Of particular significance to the Rathbun area is the Cannon Reservoir project, northeastern Missouri, being directed by Dale Henning. The experience of the Cannon project should be especially valuable in evaluating the Rathbun area, since that project has involved a long and intensive investigation of many of the same materials.

* It is noteworthy, and particularly interesting, that many earthen mounds in this region contain rock features.



Figure 1. General location of archaeological site 13AN52 on relief map of Iowa. The map has been reformatated from the Relief Map of Iowa by the Iowa Geological Survey, 1975.

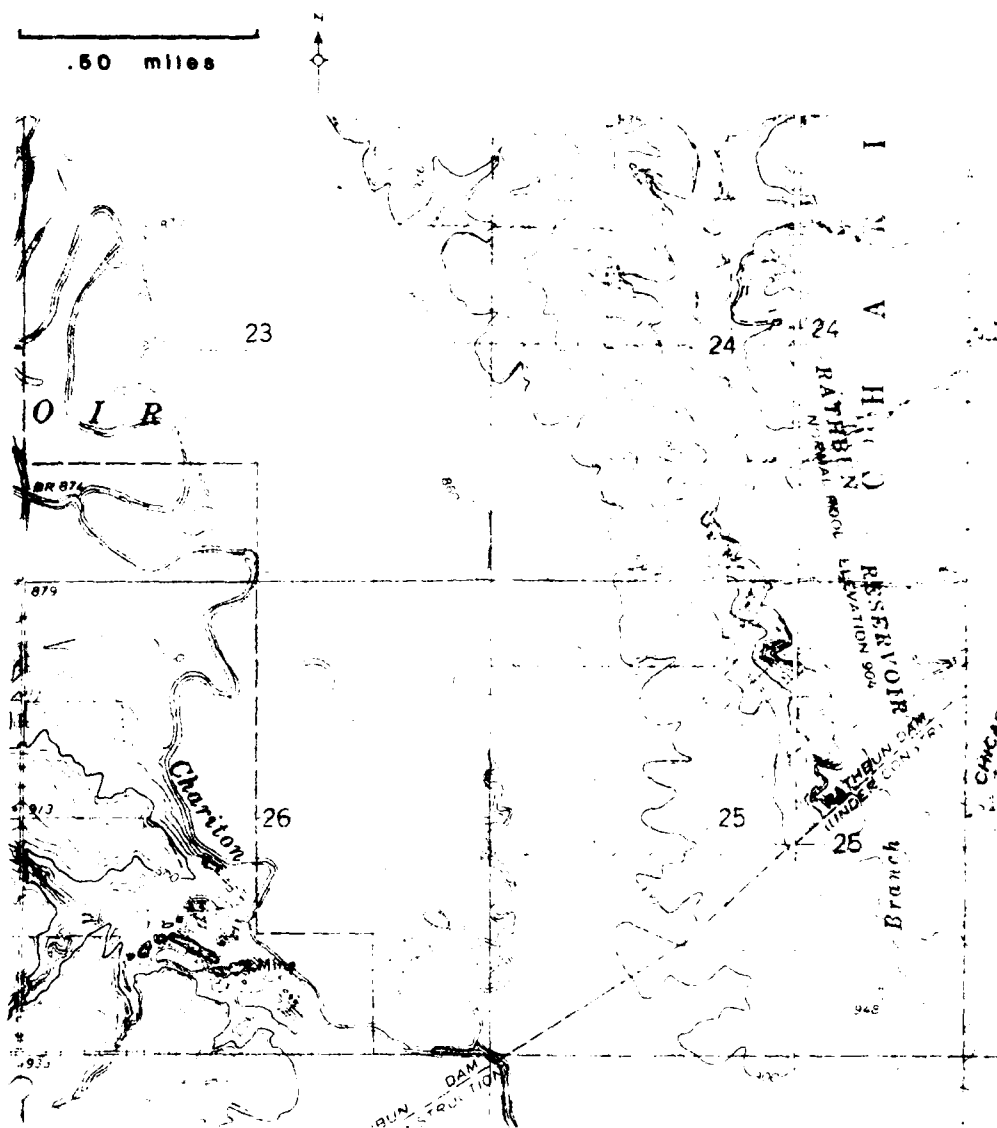


Figure 2. Topographic map of the general area of site 13AN52. The map is a composite of the Mystic and Hiattsville 7.5 minute series USGS topographic quadrangle maps. The contour interval is 10 feet and north is toward the top of the map.



1	13B	Olmitz-Vesser-Colo complex	14	132C2	Weller silt loam
2	51B	Vesser silt loam	15	T132C2	Weller silt loam
3	54A	Zook silty clay loam	16	133A	Colo silty clay loam
4	56B	Cantril loam	17	273B	Olmitz loam
5	65E2	Lindley loam	18	313E2	Gosport-Clanton silt loam
6	65F	Lindley loam	19	406	Kennebec-Amana silt loam
7	94D2	Mystic-Caleb complex	20	422	Amana silt loam
8	94E2	Mystic-Caleb complex	21	425C	Keswick loam
9	131B	Pershing silt loam	22	531B	Kniffin silt loam
10	131C	Pershing silt loam	23	532B	Rathbun silt loam
11	T131C	Pershing silt loam	24	592D2	Mystic silt loam
12	132B	Weller silt loam	25	592C2	Mystic silt loam
13	T132B	Weller silt loam	26	587	Chequest silty clay loam
			27	792C2	Armstrong loam

Figure 3. Map of soils around 13AN52. Soil legend: Numbers shown on the map and in column 1 refer to the formal numbering system used by the USDA Soil Conservation Service (1977) from which the soil information was derived, and which is shown in column 2. In column 2 the number indicates the soil type, soil complex, or land type; T indicates a soil on a bench; a capital letter following the number indicates slope; a number following the slope designation indicates degree of erosion, either moderate or severe.

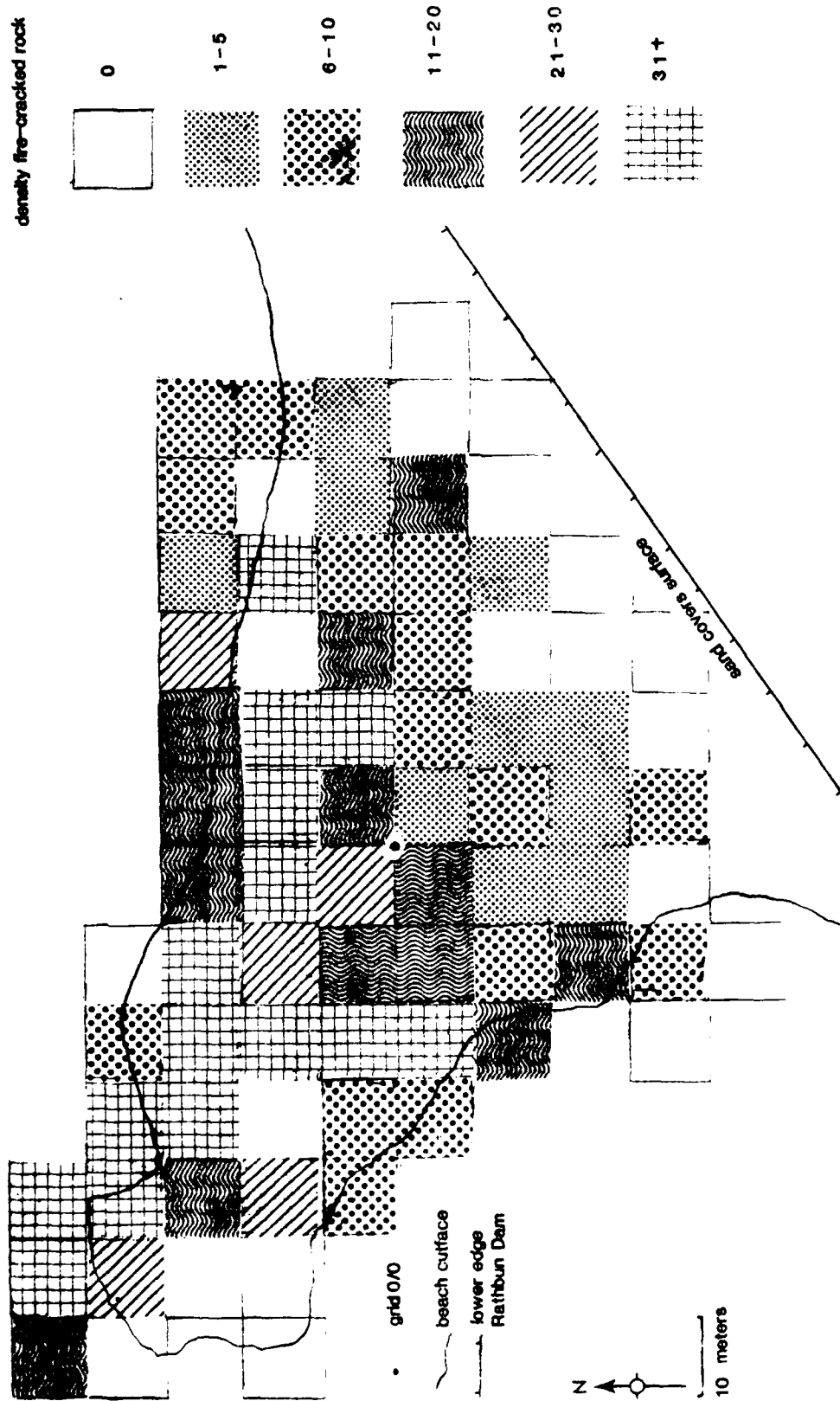


Figure 4. Distribution of fire-cracked rock at 13AN52.

FIGURE

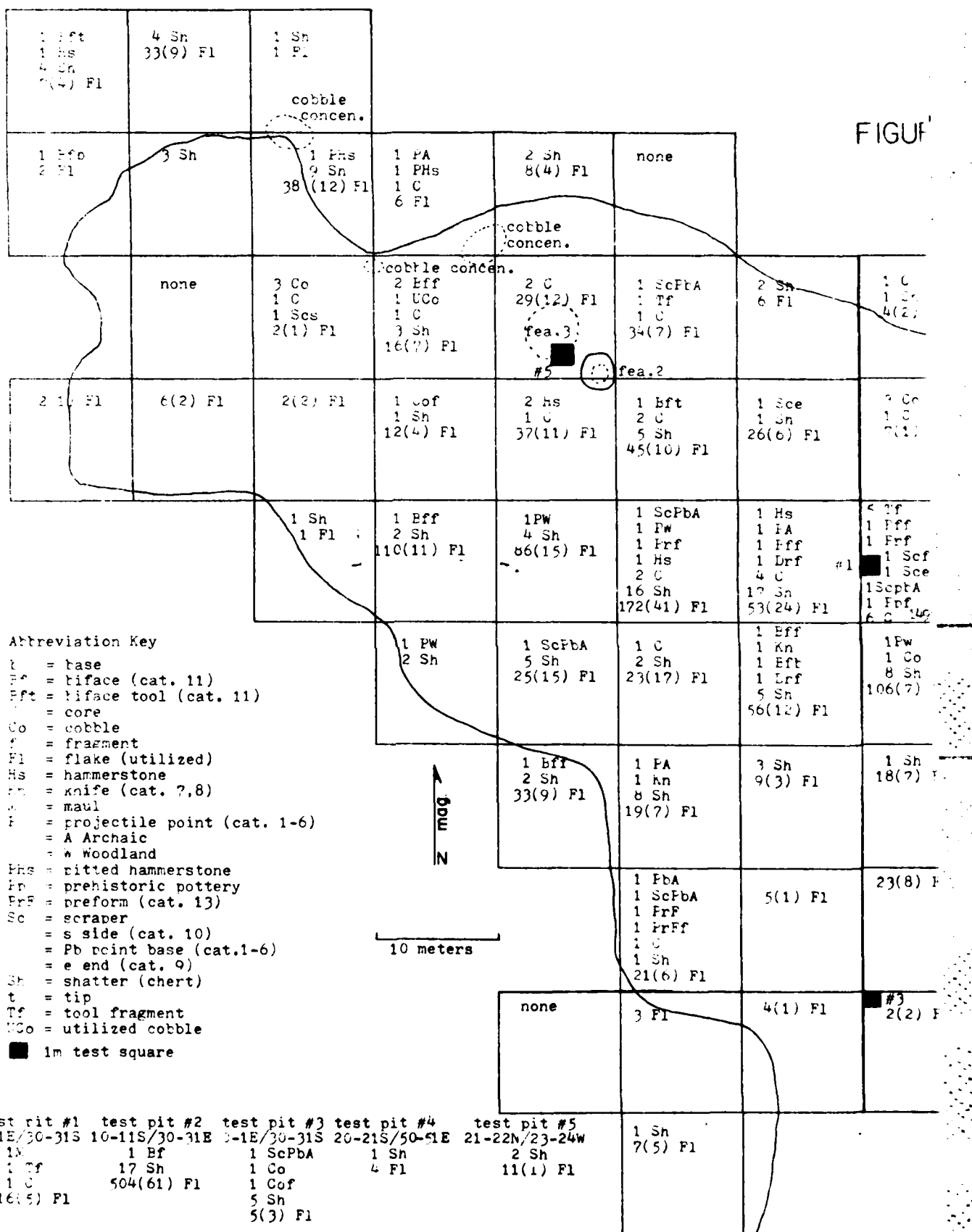


FIGURE 5: Material Remains from the Surface of I3AN52

Sh Fl	1 C 1 Sh 4(2) Fl	1nsf	1 Co 1 Sh	none	none	none
				- BEACH -		
Sce Sh 6) Fl	3 Co 1 C 7(1) Fl	1 Bff 1 Co 1 Sh 11(3) Fl	none	3(3) Fl	1 Tf 2 Fl	3(2) Fl
					beach outbank	
As A Bff Bff #1 In 24) Fl	1 Tf 27 Sh 1 Bff 1 Prf 1 Scf 1 Sce 1 ScptA 1 Prf 1 Co 149(49) Fl	2 Bff 3 C 8 Sh 68(22) Fl fea. 0	3 Sh 1 C 6(2) Fl	1 Bff 1 Bff 1 ScpbA 2 Sh 20(5) Fl	5 Sh 17(6) Fl	1 Tf 1 Bff 4 Sh 25(3) Fl
Bff In Bff Bff In 2) Fl	1fw 1 Co 8 Sh 106(7) Fl	1 Tf 2 Bff 1 Scf 1 Bff 16 Sh 151(18) Fl	1 Tf 3 Bff 14 Sh 132(57) Fl	2 Tf 5 Bff 9 Sh 157(49) Fl	1 C 4 Sh 28(10) Fl	3(2) Fl 6(1) Fl
n) Fl	1 Sh 18(7) Fl	1 Bff 1 Tf 1 C 3 Sh 43(18) Fl	8 Sh 42(9) Fl	#2 1 Bff 6 Sh 112(15) Fl	1 Sh 3 Fl	1 Sh
1) Fl	23(8) Fl	1 Sh 17(3) Fl	29(5) Fl	13(4) Fl	#4	
) Fl	#3 2(2) Fl	7(1) Fl	none			
				base of Rathbun dam		

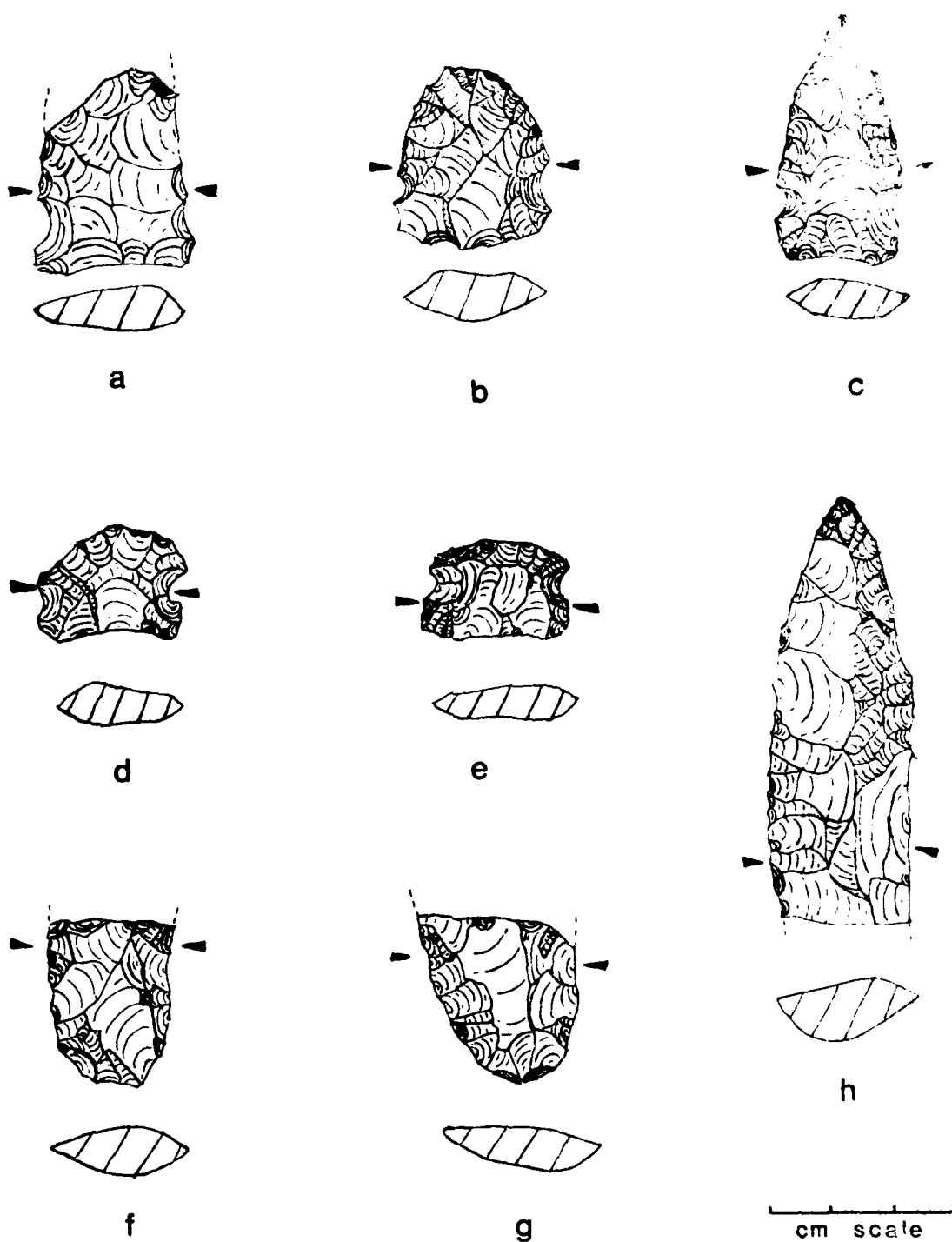


Figure 6. Artifacts from surface of 13AN52. Category 3: a, b, c, d, e; Category 8: f, g; Category 7: h. Proveniences: a) 30-40N, 30-40W; b) 0-10N, 30-40E; c) 0-10S, 30-40W; d) 0-10N, 10-20W; e) 0-10S, 20-30W; f) 0-10N, 0-10E; g) 20-30S, 10-20W; h) 10-20S, 10-20E.

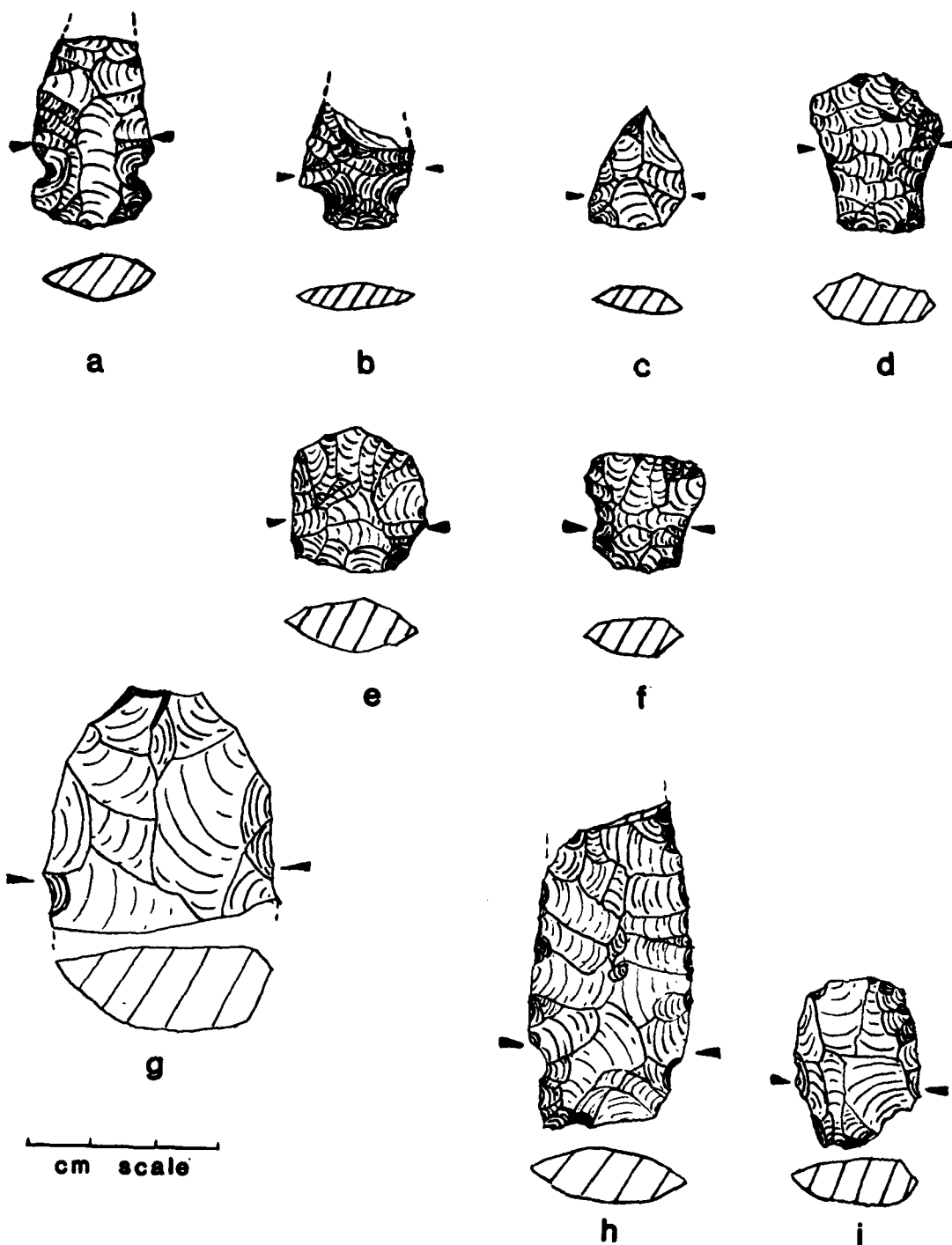


Figure 7. Artifacts from surface of 13AN52. Category 1: d, e, f, i; Category 2: h; Category 4: a; Category 5: b; Category 6: c; Category 13: g. Proveniences: a) 0-10N, 20-30W; b) 0-10N, 10-20W; c) 0-10S, 0-10E; d) 20-30S, 10-20W; e) 0-10N, 0-10S; f) 20-30N, 10-20W; g) 0-10S, 10-10E; h) 10-20S, 10-20W; i) 0-1E, 30-31S.

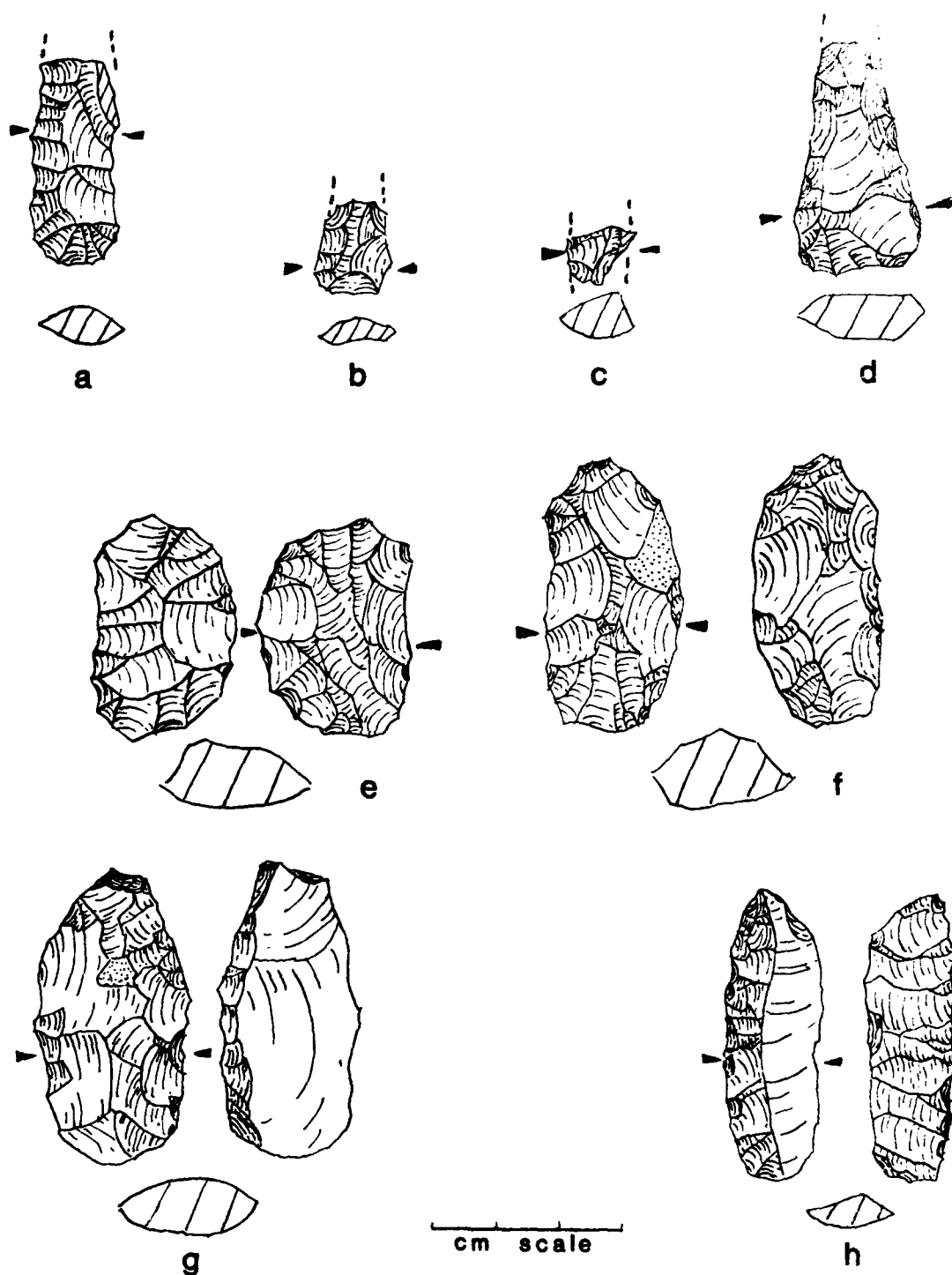


Figure 8. Artifacts from surface of 13AN52. Category 11: e, f, g, h;
 Category 12: a, b, c, d. Proveniences: a) 0-10S, 0-10W;
 b) 0-10N, 0-10W; c) 20-30N, 30-40W; d) 0-10N, 0-10E; e) 10-20N, 10-20W;
 f) 0-10S, 10-20E; g) 0-10N, 30-40E; h) 0-10S, 0-10W.

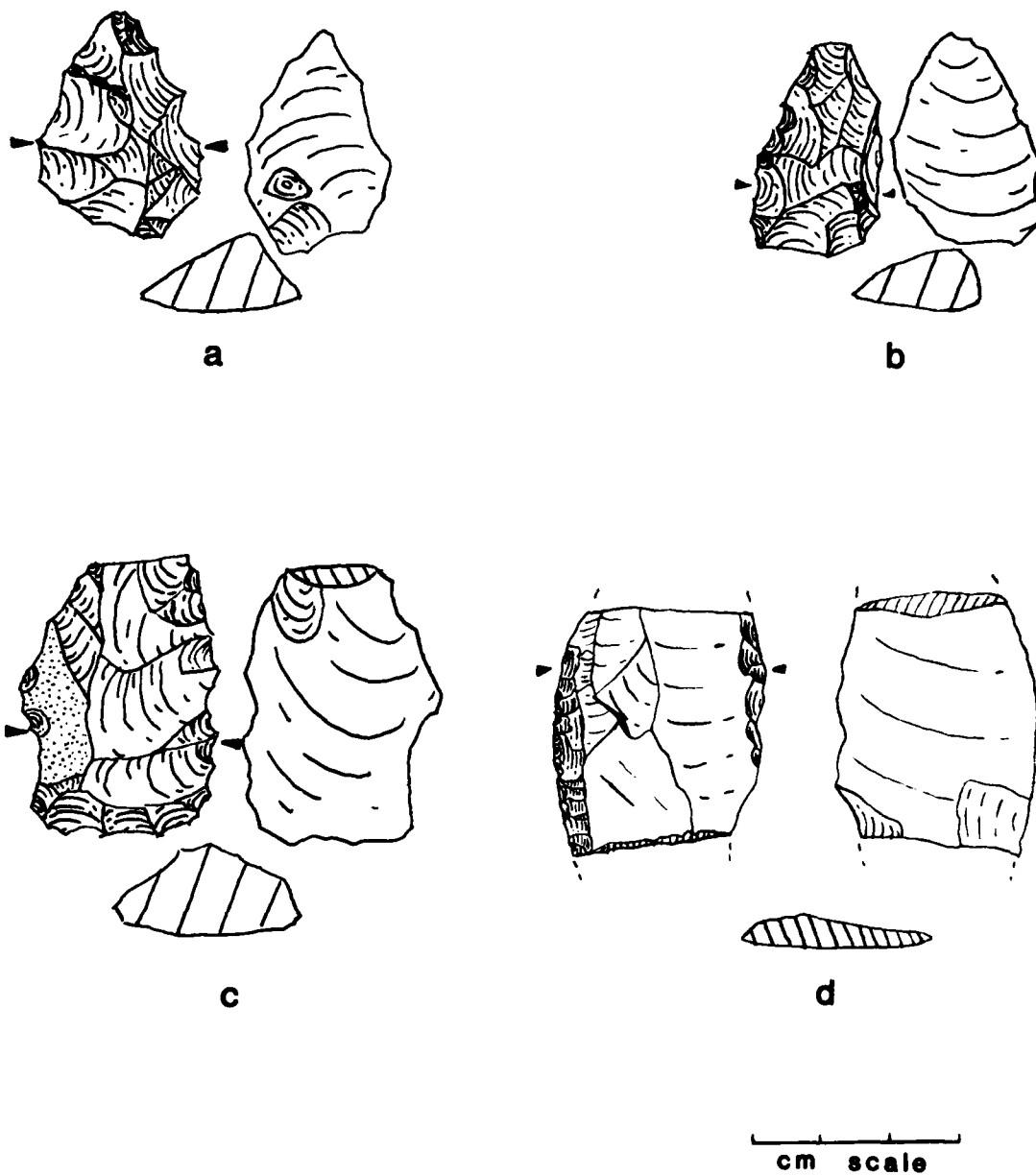


Figure 9. Artifacts from surface of 13AN52. Category 9: a, b, c;
Category 10: d. Proveniences: a) 0-10N, 0-10W; b) 10-20N, 0-10W;
c) 0-10N, 0-10E; d) 20-30N, 40-50W.

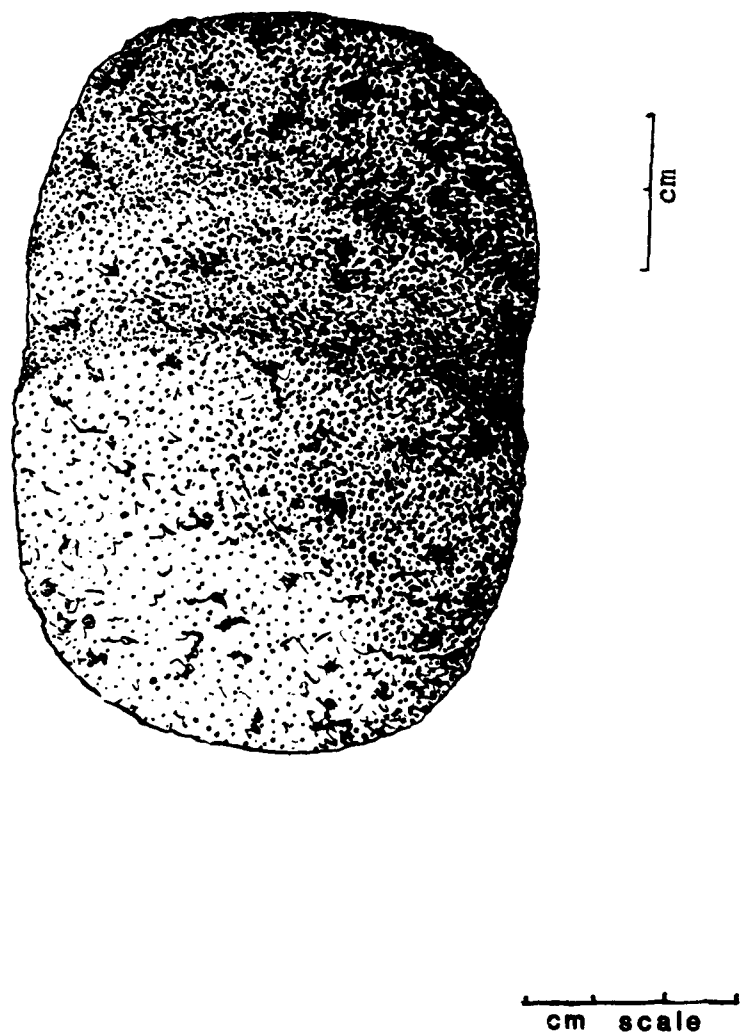


Figure 10. Maul from 13AN52 (4-5N, 0-1E; 27 cm depth).

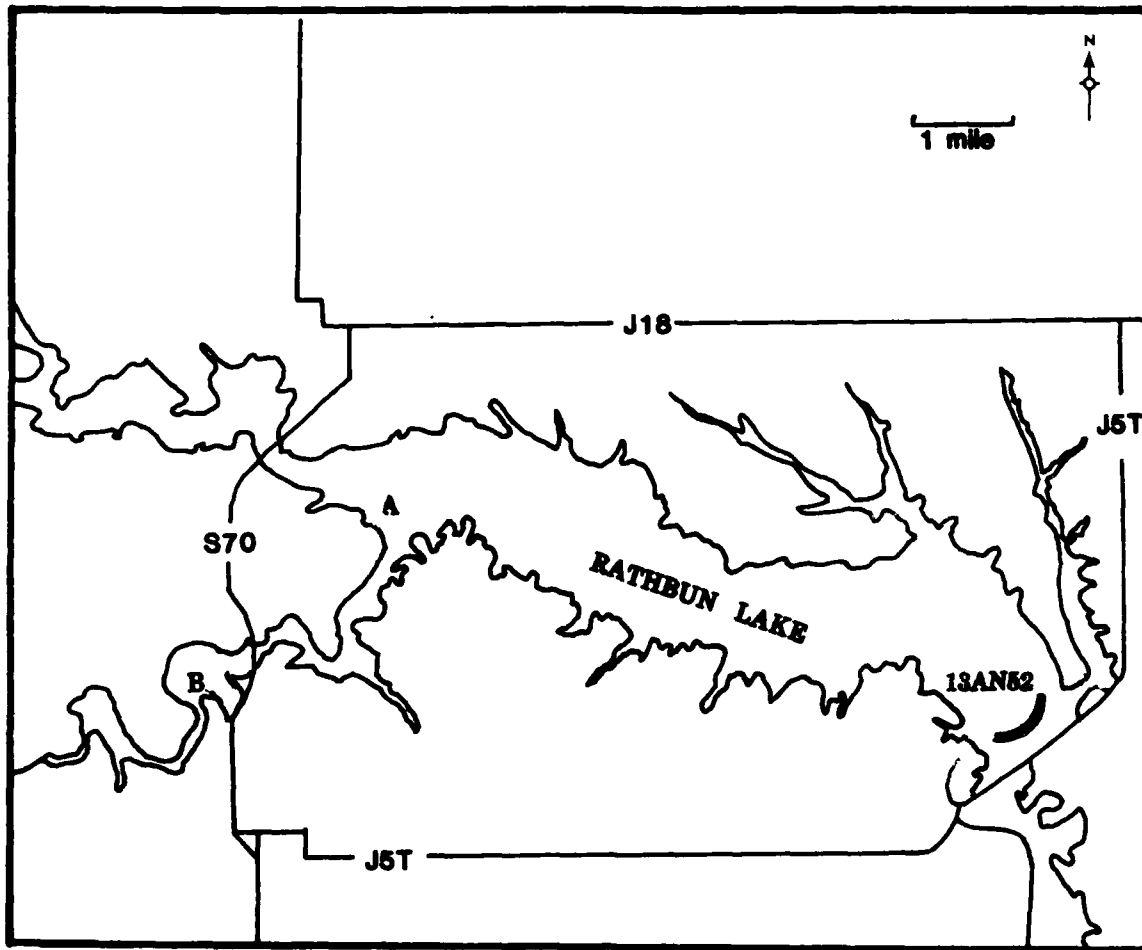


Figure 11. General location of 13AN52 and other sites mentioned in text in relation to Rathbun Lake and major County roads.



Plate 1. View of 13AN52 looking northwest from Rathbun Dam.



Plate 2. Rock features 2 (foreground) and 3 (upper center) on 13AN52. Note beach cut-face across upper right of picture and other rock features at the extreme upper center of picture.



Plate 3. Close-up view of excavation in progress in test square 2, 13AN52. This view shows numerous waste flakes (each of which is pink and white), pieces of shatter, and a biface fragment in the fine sub-angular blocky structure of the natural soil at 10 cm depth.

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APPENDIX I

Comments by Reviewers and
Contractor's Responses



United States Department of the Interior
HERITAGE CONSERVATION AND RECREATION SERVICE
INTERAGENCY ARCHEOLOGICAL SERVICES-DENVER
PO BOX 250, DENVER FEDERAL CENTER
DENVER, COLORADO 80225

IN THIS ORDER

1201-05 (742)

OCT 15 1979

Mr. Paul D. Barber
Chief, Engineering Division
Department of the Army
Kansas City District, Corps of Engineers
700 Federal Building
Kansas City, Missouri 64106

Dear Mr. Barber:

In response to your request of August 27, 1979 to Mr. Rogers, Office of Archeology and Historic Preservation, we have reviewed the draft report entitled "Phase II Investigation of 13AN52, Rathbun Reservoir, Iowa." This archeological report was prepared by Luther College under terms of your Purchase Order DACW41-77-M-1672. Enclosed please find copies of individual reviews.

The reviewers agree that the Rathbun report is a solid professional document that evidences skillful handling of minimal data and provides useful information. Review comments are primarily directed to editorial matters, and suggestions for improving an already acceptable report.

Thank you for allowing us to review this draft report; we trust that our comments prove useful.

Sincerely,

Jack R. Rudy
Jack R. Rudy
Chief, Interagency
Archeological Services - Denver

Enclosures

1. Cover letter transmitting review comments by staff of Interagency Archeological Services-Denver. Comments are noted.

RESPONSE

UNITED STATES GOVERNMENT
memorandum

RESPONSE

COMMENT

DATE: September 28, 1979

SUBJECT: Review: Phase II Investigation of 13AN52, Rathbun Reservoir, Iowa 1979 by David Benn and David M. Hovde, Luther College, Contract DACW41-77-M-1672

TO: Supervisory Archeologist (Hoffman) *PH*

General Comments

SOM

- a. determine vertical and horizontal extent of the deposits at 13AN52 and their significance;
- b. report findings and determine National Register eligibility.

Methods

- a. make a controlled surface collection;
- b. excavate using 2 x 2 meter squares;
- c. collect by 10 cm intervals;
- d. record;
- e. curate and interpret and add a glossary of technical terms.

Field work was done October 16-17, 1978.

This Phase II investigation reports on two days of controlled surface and subsurface testing at site 13AN52 in southeastern Iowa. It is a straight forward example of investigation which was competently executed and reported. I concur with the recommendations that 13AN52 has been severely impacted by a variety of influence over the past several years, therefore, the site does not merit National Register consideration. The research design proposed for future investigations involving other sites in the Rathbun Reservoir is laudable and deserves attention before additional sites are added.

- 3 There are some parts of this report which require attention.
- 4 Who is David M Hovde? He is not identified as a crew member nor is his relationship to the project specified.

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OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA GEN. REG. NO. 27

2. Comment is noted.

3. Comment is noted. Responses follow.

4. Comment/question is assumed to be in reference to Mr. Hovde's role in the project. The introduction has been modified to reflect Mr. Hovde's role.

COMMENT

RESPONSE

- 5 The Abstract is poorly done. It is redundant to say that testing analysis, etc. are reported. This is to be expected from an archeological report.
- 6 Citations do not follow American Antiquity and American Anthropologist style. A comma is not required after the author, Ibid. and opt. cit. are not used.
- 7 Soil profile drawings are not provided. On pages 12-4 descriptions are given for test pits 1 to 4. What happened to t.p. #5? Profile measurements are not provided and the Munsell color charts were not used. T.P. size used was 1 x 1 m and not 2 x 2 m as per SOW.
- 8 Give site size.
- 9 Are the collections being curated at Luther College?
- 10 It is very difficult to identify the specific chipped stone artifact with the Fig. This is confusing and very hard to follow.
- 11 Provide a glossary of technical terms.
Specific Comments
Nit picking: SOW calls for black and white, not color prints. Map of Rathbun Lake is not attached, not given a figure number, site 13AN52 is not located.
P. 1, para 1 - First sentence is clumsy. This would be better construction: The Chariton River, where 13AN52 is located, flows through the Prairie Peninsula (Fig. 1).
P. 2, para 2 1.1 - substitute - In geological terms, the . . . for Geologically.
1.6 substitute "while" for "and"
1.8 begin sentence "For our purposes the underlying. . ."
P. 3, para 1 - Valley 45 m deep. What does this mean? Are the soils this deep?
para 4 1.1 - substitute "is" for "includes"
P. 5, para 3 - I don't want to go to the mat over this point, but this view of Paleo-Indian is very text bookish and too restrictive. Nomadism and big game hunting are almost certainly being over emphasized. Also, where is the direct evidence for the use of the atlatl? Compound spear shafts are not evidence for this artifact. I don't believe that one should do this, but why not call them harpoons since compound shafts are associated with this weapon?

5. The Abstract has been revised.
6. Reference style has been modified as suggested by the comment.
7. Soil profile drawings are a duplication and could not depict w accuracy that which can be described in standard soil science terms. The text has been expanded to include a description of the soil in test square #5. Profile measurements, and Munsell color notations and color names, were given and are reiterated in the final version of the report. Comment regarding the size of the test squares is noted and is addressed in later responses.
8. The text has been modified to state the horizontal size of the site.
9. The collections are stored at Luther College.
10. The figures have been modified to facilitate cross-referencing between the text and the figures.
11. The Glossary of Technical Terms has been added.
12. While the comments are nitpicking the color photographs have been replaced with black and white photographs, the area map included, and the site location shown on the map.
13. The suggested change has been made.
14. The suggested changes have been made.
15. This means the base of the valley is in some points over 45 meters below the elevation of the uplands. The depth of the soils in the valley is not addressed in this paragraph.
16. The suggested change has been made.
17. The text reflects the opinion of the authors and has not been changed. The intent, however, is to not be restrictive.

COMMENT

- 18. P. 6, para 5 - Late Woodland sites are under represented? What does this mean? That there aren't as many of these sites as the P.I. thinks there ought to be or that to date, these sites are poorly represented by the available data or all of the above?
- 19. P. 6, para 2 - How many sites did Wheeler record?
- 20. Give some information about the surveyed sites, i.e., age, cultural affiliation, location, function. Quantify and define site.
- 21. P. 10, 11 - Identify Arthur Pettis.
- 22. P. 13, para 2, l. 3 - Canva needed after waters
- 23. P. 14, para 2, l. 5 - Change, have examples of tooling, to show evidence of flint and something . . .
- 24. P. 22, para 2 - Soil is acidic - Give Ph.
- 25. Change para 9, l. 8 - Change "my" to "our" in order to reflect dual authorship.

RESPONSE

- 18. The statement means "all of the above" as stated in the comment.
- 19. Apparently Wheeler (1949) recorded only one site (13AN1) in the project area of the Rathhun Dam as it was proposed to be at that time. 13AN1 is a Woodland mound group. Numerous other sites are noted by Wheeler and his reports should be consulted for further information about the sites he reported.
- 20. Arthur Pettis is identified in the "Introduction" of the report.
- 21. The suggested change has been made.
- 22. The suggested change has been made.
- 23. The suggested change has been made.
- 24. The suggested change has been made.

DATE: October 1, 1979

COMMENT

UNITED STATES GOVERNMENT

memorandum

SUBJECT: Review of "Phase II Investigations of 13AN52, Rathbun Reservoir, Iowa" by David Benn and David Novde, DACW41-77-R-1672

re: Supervisory Archeologist (Hoffman) *PHH*

Basic Scope-of-Work requirements are to test 13AN52 for determining verticle and horizontal extent including (1) controlled surface collection; (2) dig in 2 x 2 units (why this size?); (3) collect material in 10 cm intervals or by 10 cm levels within stratigraphic units (what happens when the strat unit is less than 10 cm thick? - violate SOM?); (4) one test square into sterile at least 3 ft. below last cultural level; (5, 6, 7 & 8) map, photo and catalogue, lit review, etc.

The rest of the SOM is straight forward except for Item 6.f. "Certificate of Authenticity." What is the "validity of materials recorded?" I wouldn't sign such a thing for Gordon Willey or Louis Binford! What mean these words?

P. 1 - I always thought that Dave Stanley seemed to be here and there. Now I know I wasn't seeing things.

P. 2 - (Prior, 1976:45) should be (Prior 1976:75) - no comma per American Antiquity format. Likewise, I don't believe "Ibid" or "op cit." are acceptable either.

P. 3 - Why is Grantham cited as "n.d.?" Surely, there is a date for this work.

P. 5 - Agree with the authors - east to west is too simplistic a model. I don't believe Hoffman (1965) calls the points he found to be Archaic.

P. 10 - Although the authors chose to lay out a grid of 10 m squares, this is far too large an area to reveal any kind of patterning except for gross units in a meso-American village. Data are lost at an extremely high rate the bigger the square. However, the size of the unit chosen depends on the questions being asked. 1 x 1 m excavation units - the SOM calls for 2 x 2 m units.

P. 14 ff: chipped stone - weight? Source of nomenclature or chart on where projectile point measurements were taken is needed.

P. 18 - "pitted hammerstones" see also Winter's Riverton Culture and Wood and McMillan's "Man and His Environment in the Ozarks."

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RESPONSE

25. Comment pertains to the scope of work and not to the report. No response is necessary.
26. Comment pertains to the scope of work and not to the report. No response is necessary.
27. Comment is noted.
28. Reference format has been revised but the page reference was not changed; the correct page was referenced in the draft report and is reiterated in the final version.
29. Grantham's report had not been accepted by the federal agency sponsor at the time of this report.
30. In the opinion of the authors of this report 13AN202 contains an Archaic component. The site was first recorded by Hoffman (1965).
31. As stated, the size of the unit chosen depends on the questions being asked. The method has been useful based on previous studies in Iowa for determining gross patterning in surface scatters. The variance from the scope of work in terms of the size of test squares was addressed in the draft and is reiterated on pages 11 and 12 of the final version.
32. The text has been modified to identify the references used as the basis for definitions of terms used in the lithic analysis.
33. The suggested references are noted.

RESPONSE

34. Grantham's work at Long Branch is useful for comparative purposes. However, the deflated nature of the rock features at 13AN52 precludes useful analysis; and the deflated nature of the features also precluded detailed mapping of them beyond showing their location on Figure 5.

35. Comment is noted.

36. Comment is noted.

37. Comment is noted.

38. Comment is noted.

39. Comment is noted.

40. Comment is noted.

COMMENT

14 P. 22-23: Fire-cracked or burned rock - see especially Grantham's Long Branch Reservoir work (East Fork of the Chariton, Missouri) where he has done extensive (ad nauseum) analysis of the stuff. If I remember correctly, cobble hammerstones (usually chert) were almost always found (sometimes cached) associated with FCR. Where are the maps of the features investigated at 13AN52?

35 P. 26 - Item a: interesting point - if Benn and Koelchman are correct. If they are, then this area would be of extreme importance on reflecting the nature of cultural change from Archaic to Woodland.

Summary

36 In general, this report meets the intent of the SOW.

37 The comments on page 26ff for evaluation and recommendations, points b, c, d, and e should be heeded. To Item e, I would add Grantham's 4 or 5 years of work at Long Branch Reservoir.

38 In evaluating the National Register recommendations, I am torn between agreeing and disagreeing with the authors.

39 In situ deposits are present (NR eligible) but the site has been disturbed to such an extent (mostly unknown) that future work is not recommended (not eligible). The question, therefore, becomes: is the site still capable of yielding information important to prehistory (36L860.6(d))? The answer is yes, but is it worth it given the disturbed nature of the site? Probably not as the authors cite other sites in the area that may contain the same information. The danger of not nominating this site would be if the Corps does no more work on the other sites in the area.

In such an instance, the information from this site will not be duplicated elsewhere at any time. Should the Corps make a commitment to follow Grantham's management plan and those of Benn and Howde, then I would have to agree with the authors not to pursue further work on this site. This is a very pragmatic opinion, as apparently is Penn's and Howde's, but requires a guarantee of future commitment by the Corps to the other threatened sites in the reservoir area.

40 Good report.

memorandum

DATE

October 10, 1979

COMMENT

SUBJECT: Review of "Phase II Investigation of 13AN52, Rathbun Reservoir, Iowa" by David M. Benn and David M. Novde

to Review Coordinator *ggt*

41 Subject report is a review draft prepared by Luther College, Iowa and submitted to Kansas City District Corps of Engineers under terms of Purchase Order DACW41-77-M-1672. The purpose of the study was to make additional tests of archeological site 13AN52 in order to determine its limits, integrity and significance by criteria of the National Register of Historic Places.

42 Field operations consisted of site mapping, controlled surface collection of cultural material, and subsurface exploration by hand-dug pits and augered holes. Evidently, the site has been subjected to repeated inundation and drainage, resulting in a largely, but not wholly, deflated series of archeological deposits. The report is not completely clear in this matter. At least one test pit revealed the native soil profile to be largely intact; other test pits disclosed recognizable artifact bearing levels and identified soil horizons. On the other hand, the investigators speak of redeposited sands and a lack of in situ cultural material.

43 Whatever the structural integrity of the site may be, the investigators show that large portions of the site have been deflated. In spite of this, the authors have done a credible job of interpreting cultural patterns and intra-site patterning by means of stone features and artifact distributions. Due to their skillful handling of field results, the authors come dangerously close to demonstrating that site 13AN52 has yielded information important to local prehistory; thus, supporting a recommendation for nomination to the National Register. While the authors believe that too much information has been lost from the site by various means, they note that a portion remains intact under one wing of Rathbun Dam. In my estimation, the integrity of site 13AN52 and its significance under National Register criteria have yet to be resolved.

44 The report is a succinct document that adequately details the field investigations. Descriptions are well presented, and graphics are clear and pertinent to the text. Minor editorial matters remain to be corrected or clarified. For instance, the artifact captions of Figures 6-9 are rather confusing to follow along with the text.

41. Comment is noted.

42. Comment is noted.

43. Comment is noted.

44. Comment is noted but, in addition, the artifact illustrations and captions have been extensively reformatted and the captions further revised.

RESPONSE

45. Comment is noted.

COMMENT

Only other adverse criticism concerns Article 6f of the Scope-of-Work in this study. The article requires a "Certificate of Authenticity" from a recognized expert not employed by the contractor that attests to the validity of the materials recovered by this study. I have never seen this requirement in an archeological contract, and I have no idea what it really means. Despite its hilarious implications, such a requirement does smack of antiquarianism that has no place in anthropological archaeology.

COMMENT

DATE: October 11, 1979

RESPONSE

memorandum

SUBJECT: Review: "Phase II Investigations of 13AN52, Rathbun Reservoir, Iowa" USACE, Kansas City District, Contract DACW41-77-M-1672

TO: Supervisory Archeologist (Hoffman) *gfk*

General Comments

The Scope-of-Work requires additional testing of site 13AN52, at the Rathbun Lake Reservoir for the U. S. Army Corps of Engineers, Kansas City District, in order to ascertain the vertical and horizontal extent of the deposits and to determine the significance of findings in regard to National Register eligibility.

I find this report acceptable. The site is considered too far destroyed to be of National Register significance and the investigators make good points for the value of further study of the Rathbun Lake area.

My major general criticisms of this report are a sometimes awkward writing style, poor figures and plates and lack of citations or references to back up certain statements (discussed below).

INTRODUCTION

46 | p. 1, para 2 - Are there two David Stanleys?

47 | para 3 - There must be biological data somewhere for this time period. If not, it shows the need for this in the Rathbun Lake area.

ENVIRONMENT

48 | The early historic period is specifically addressed in this section - how about Archaic and Woodland? Changes in environment create changes in subsistence systems. For example, the Central Based Wandering Community and the Restricted Wandering Community can be responses to environmental changes over time.

GENERAL PREHISTORY OF THE RATHBUN RESERVOIR AREA

49 | p. 5, para 1, line 10 - interpretation, not "interpretations"

50 | p. 7, para 1, line 1 - AD 1000 rather than "AD 1000 A.D."

REVIEW OF INVESTIGATIONS

51 | p. 8, para 2, line 2 - upstream not "up stream"

46. Only one David Stanley was associated with the testing of 13AN52.

47. No biological data for the Archaic period are available for the Rathbun Lake area. Such information would be very useful.

48. Comment is addressed in the response immediately preceding of this response.

49. The suggested change has been made.

50. The subsection title has been modified.

51. The suggested change has been made.

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COMMENT

22. 1000' ELEVATION AND MOUNTAINS

p. 10, para 1, line 11 - eligible not "eligible"

line 27 - intact not "in tact." This is incorrect throughout the report.

p. 10, bottom of page - 2) The Scope of Work called for 2 x 2 meter excavation units. How and why did investigators choose to do 1 x 1 meter units? What sampling strategy was used? Based on surface collection, previous reports, intuition, what? For example, (p. 21) Test unit #5 appears to have been chosen to accommodate profiling of Feat. #3. Is this so? Also, "excavation carried to C soil horizon . . ." At this point in report "C soil horizon" is left hanging. How about a depth or range of depths?

p. 11 - 4) Specifically which tests were augured?

5) What were the results of boat reconnaissance to MS end of the reservoir? No mention in report.

REVISIONS OF THE 19852 RECONNAISSANCE

The Drafting

p. 14 - 4) Soil profile is missing for test units 3 & 5. While authors state that there are "representative" profiles, lack of information on the site leads to a problem later on (p. 20) discussed below.

The Data

p. 14 - 5) The data is all here. However, the format of presentation is not enough to be desired. I would prefer a table or chart to facilitate examination of the categories, numbers of each in the assemblage, etc.

The authors use good cross cultural organization of artifacts from Ruthven to context, but not clear as to location of these other sites. Are they in the project area? Similar to the units? Materials, etc.?

Figures 10 are very confusing. Are other artifacts attributed somewhere? Wouldn't it be easier to refer to this number on the figures and by test unit rather than with a confusing array of numbers? Very difficult to check out as referenced in report.

p. 18 - The find of a rare (for southern Iowa) artifact (the small ear-pottery) is more than mentioned and described. How about an illustration or figure?

RESPONSE

52. These typographical errors have been corrected.

53. Deviation from the 2x2m test unit size was discussed in the draft and is reiterated on pages 11 and 12 of the final version. The deviation is felt by the principal investigator to be justified and the scope of work was interpreted by the principal investigator to be sufficiently flexible to allow the change. The rationale for the placement of test square #5 was explicitly stated in the draft and is reiterated on page 23 of the final version. Soil profile descriptions including depths, were included in the draft and are reiterated on pages 13, 14, and 15 of the final version.

54. All test squares were "augured" (see page 12 of the final report version).

55. Results of the boat reconnaissance were discussed in the draft and are reiterated on pages 7 and 28 of the final version of the report.

56. See previous responses to similar comments.

57. The format of the draft has not been modified in this regard. Since the categories are for different types or forms of different kinds of artifacts one table with all of the data would not enhance the interpretation. While such a table might improve the mechanical means of presenting data it would remove the data from the section it is most relevant to, thus reducing the continuity of the text.

58. The sites are not in the project area unless noted, nor always in similar environments. The geographic region where the sites referred to are located is either stated in the text of this report or can be determined by examining the locations noted in the text and "References" section of the report.

59. The format of the figures has been revised extensively.

60. The text has been revised to note the presence of pottery in Appanoose County. The map from 19852 has been illustrated and the illustration included in this report.

COMMENT

RESPONSE

TEXT EXCERPTS

61 P. 20 - Again, all the data is here. However, wading through it all and flipping back and forth to hard-to-read figures is inconvenient. I could suggest again, more visual references. They can be concise and packed with information without being wordy.

62 1) explain "cultural features" - could say (i.e., hearths, post-molds, pits, etc.)

63 2) What kind of pipe: for what purpose?

64 3 & 5) References to "B3, B2 horizon levels are meaningless without other information. As mentioned earlier, no soil profile description or depths are given for test units 3 & 5; therefore, references to soil levels and horizons seem unclear.

DISCUSSION

65 P. 22, para 2 - "since such materials . . . once present. . ." How know such matters present? By cross-cultural comparison to similar sites in or out of area? By intuition? How? Apparently conditions have dissolved all remains - none were found.

66 This report really shows the significance of doing early archeology so that data isn't lost through erosion, construction, and non-scientific collecting. It might be feasible to locate and study diagnostic artifacts in private collections. This has been successfully done recently (Skinner et al 1977).

67 para 4 - dichotomy not "dichotomy"

68 P. 23, para 1 - "... densities of lithic debris and tools lower. . ." How does greater depths of redeposited sand contribute to lower densities of lithic debris and tools? Cite any studies of this?

CULTURE PATTERNS

69 para 1, line 2 - awkward sentence "archeological component identified by artifacts found in . . ." Might be said: Archaic component identified through inter-site comparison. . .

70 para 2 - Is there a model showing woodland components to usually be short term in this type of environment? Lack of woodland data seems to be the reason for this statement, but it might be a regional trend.

71 para 3 - dichotomy not "dichotomy"
For a possible alternate view to the single occupation of a site based on placement of features and artifacts, see discussion in Binford 1972.

61. The general format of the draft has been maintained because tabular portrayal of the data would be extremely cumbersome. By putting the quantifiable data in tabular form, most of the table would be blank or, if not, the data would have to be over-generalized. The authors are of the opinion that the data, in this instance, are better left in narrative form, which also lessens the likelihood of misinterpretation by users as a result of segregating it from a narrative context. The descriptions of the features have been rearranged into discrete paragraphs.

62. The phrase "cultural features" is used for brevity and subsumes many potential kinds of features.

63. The pipe is a metal one, placed for a use as a reference point for future investigations.

64. Soil profile descriptions are provided in an earlier section of the report. The profile description for test square #3 was subsumed under the description for test square #1; the draft has been revised accordingly. A brief description of the soil profile of test square #5 has been added. Reference to soil horizons by their international nomenclature designations is not meaningless although it does presume a basic knowledge of soil terms.

65. The inference is based on past experience.

66. The comment is noted.

67. The suggested change has been made.

68. The density is probably due, in part, to the rate of redeposition of the sand. The faster the deposition the lower the density when the original number of tools is redeposited. Faster and greater erosion under conditions where artifacts would sink downward, the higher the density will be. No specific studies of this kind involving artifacts are known to the authors. A plethora of soils, geomorphological, and hydrologic studies involving various sediment sizes have firmly established the inter-relationship of velocity, water volume, bed load and sediment size.

69. The sentence has been modified to improve its clarity.

70. Such model building has not progressed to this level of sophistication in the region.

71. The typographical error has been corrected. The reference to Binford is appreciated and acknowledged to be useful. In this instance the loss of integrity of the site is such that reference to Binford, and others, would not enhance the interpretation.

RECOMMENDATIONS AND FUTURE RESEARCH
COMMENT

72 | P. 25 - Is a "distinct dichotomy" (p. 25, para 5) in discard pattern the same as a "complex intra-site pattern"? They seem to be polar.

73 | P. 25 & 26, last sentence - change to "...since most significant data has been removed, we recommend that no archeological research is warranted."

74 | P. 26 - research problems suggested:
a) good points toward problem-oriented future research

75 | P. 27 - d) good point
e) burned rock cultures of Midwest - references for this?

FIGURES

- 1) not clear enough
- 2) date and source of map?
- 3) type of test? Why use soils map for this? no key
- 4) taken hard to read. A good graphic - loaded with information and easy to read. Too bad the center reproduces poorly.

Notes: Remember to keep text and figures, etc., in a size to fit the 8 x 11 1/2 page size required by Scope-of-work.

690 - mentioned on previously

TABLE

76 | Table 1 - Table 1 - replace clearly - black and white reproduced in the Scope-of-work.

20 - no standard orientation

30 - Table 1 - Table 1 - hard to read: artifacts could be labelled A, B, C with key for easy reference

References Cited for Figures

1978 *Midwest Archaeology* Vol 43, No. 3, July 1978, p. 310
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1979 *Midwest Archaeology* Vol 86, No. 3, July 2021, p. 310
1979 *Midwest Archaeology* Vol 87, No. 3, July 2022, p. 310
1979 *Midwest Archaeology* Vol 88, No. 3, July 2023, p. 310
1979 *Midwest Archaeology* Vol 89, No. 3, July 2024, p. 310
1979 *Midwest Archaeology* Vol 90, No. 3, July 2025, p. 310

RESPONSE

72. The word "distinct" has been deleted. The word "complex" has been changed to "potential".

73. The suggested change has been made.

74. The comment is noted.

75. Comment (d) is noted. The phrase "burned rock cultures of the Midwest" has been deleted. The phrase is a non-technical field term based on the common observation that numerous site assemblages are overwhelmingly composed of thermally altered rough stone and contain proportionately few "worked" artifacts.

76. Suggestions are noted, most appreciated, all followed.

APPENDIX II

Copy of Scope of Services

RATHBUN LAKE
CHARITON RIVER, IOWA
SCOPE OF WORK
CULTURAL RESOURCES MANAGEMENT PLAN
ADDITIONAL TESTING OF SITE 13AN52

1. INTRODUCTION

a. Rathbun Lake is a multipurpose project located on the Chariton River in Iowa. The lake at multipurpose pool elevation has a surface area of 11,000 acres; 33,908 acres were purchased in fee for project purposes.

b. The following reports are the results of work funded by the National Park Service or Corps of Engineers.

Hoffman "An Appraisal of the Archaeological Resources of the Rathbun Reservoir"

McKusick and Ries "Archaeological Resources of the Rathbun Reservoir Drainage, Iowa"

Wheeler "Preliminary Appraisal of Archaeological Resources of the Rathbun Reservoir, Chariton River Basin, Iowa"

Weichman "A Preliminary Archaeological, Architectural and Historical Reconnaissance within the upper Chariton River Valley: Appanoose County, Iowa and Putman County, Missouri & An Intensive Survey of Archaeological, Architectural, and Historical Resources within the Proposed Lodge Complex Project, Lake Rathbun, Iowa."

c. The work defined herein to be performed by the Contractor will provide documentation evidencing compliance with the National Historic Preservation Act of 1965, P.L. 89-665 and is authorized for funding under P.L. 86-523 as amended by 93-291.

2. SCOPE

a. The study encompasses the additional testing of site 13AN52 to determine the vertical and horizontal extent of the deposit and significance.

b. The Contractor will conduct this study in a professional manner. The Contractor will prepare a report of findings as specified in paragraph 6.

3. COORDINATION

Prior to initiation of actual field work the Contractor shall coordinate all field schedules and activities with the appropriate project cultural resources coordinator.

4. STUDY METHODS

(1) The Contractor will utilize the following methods to complete the study:

- (a) Make a controlled intensive surface collection of the site.
- (b) Using 2-meter by 2-meter squares, perform test excavations (minimum of 2 noncontiguous squares per site).
- (c) Collect artifactual materials in 10-centimeter intervals within the test squares.
- (d) One test square shall be excavated to sterile material (sterile material is defined as obtaining no artifacts below the plow zone within a 20-centimeter interval).
- (e) All phases of the testing operations shall be photographed (black and white 3" x 5"). Documentation shall include all features.
- (f) Map the location, both vertically and horizontally, of all features.
- (g) Process, catalog, and curate all recovered materials.
- (h) The Contractor shall conduct all necessary review of literature, Governmental reports, and other sources of information in the depth required for a comprehensive coverage of the study. The Contractor shall accumulate, develop, and interpret all needed scientific and technological information and data.
- (i) The Contractor shall provide a safe working environment for all persons in his employ as prescribed by EM 385-1-1, "General Safety Requirements."

Staff and Facility Requirements

(1) Project Director. The person in charge of this project must have the doctorate or an equivalent level of professional experience as evidenced by a publication record that demonstrates experience in field project formulation, execution, and technical monograph reporting.

(2) Archeologist. The minimum formal qualifications for practicing archeology as a profession are a B.A. or B.Sc. degree from an accredited college or university, followed by two years of graduate study with concentration in anthropology and specialization in archeology during one of these programs, and at least two summer field schools or equivalent under the supervision of archeologists of recognized competence. A master's thesis or its equivalent in research and publication is highly recommended, as is the Ph.D degree.

(3) Standards for Consultants. Personnel hired or subcontracted for their special knowledge and expertise must carry academic and experiential qualifications in their own fields of competence.

(4) Institutional or Corporation Qualification. The Contractor must provide, or demonstrate access to the following capabilities:

(a) Adequate permanent field and laboratory equipment necessary to conduct operations defined in the scope of work. However, this qualification may be waived under circumstances of extreme need through negotiation.

(b) Adequate laboratory and office space and facilities for proper treatment, analysis, and storage of specimens and records likely to be obtained from the project. This does not necessarily include such specialized facilities as pollen, geochemical, or radiological laboratories, but does include facilities sufficient to properly preserve or stabilize specimens for any subsequent specialized analysis.

Collections. The collections shall be stored in containers clearly marked "Property of the U.S. Government, Corps of Engineers, Kansas City District." These materials may be stored at the contracting firm's laboratories for use in future studies or at a repository agreed upon by the Corps, the Contractor, and the Iowa State Historic Preservation Officer. Retrieval of these materials by the U.S. Army Corps of Engineers for use by them is reserved. If materials are to be removed from the agreed upon facilities, this action must be previously approved by the Contracting Officer or his representative.

Court Action. In the event of controversy or court challenge, the principal investigator(s) (that person(s) responsible for the validity of the material presented in the report) shall testify on behalf of the Government in support of the report findings.

5. DATA, INFORMATION, AND SERVICES TO BE FURNISHED BY THE GOVERNMENT

The Government will provide the Contractor with available background maps, reports, remotely sensed data, and correspondence as needed and will provide support regarding suggestions on data sources, format of study outline and reports, and review of study progress.

6. SCHEDULE OF WORK

a. The Contractor shall pursue the study in a professional manner to meet the schedule specified. In addition, the Contractor shall review the progress of the work performed with the Corps of Engineers after 50 percent of field work and after the submittal of the draft report.

b. Thirteen (13) copies of the draft of a report of findings, together with five copies of background data, shall be submitted to the Government for the purpose of peer and Governmental review within 4 months after receipt of the Notice to Proceed. (If excessive inclement weather or other delays are incurred, this date may be extended to one mutually agreed upon between the Contracting Officer or his representative, and the Contractor.)

c. Thirty (30) calendar days after the return of the draft report by the Government the Contractor shall submit one set of originals of the final report of findings and the background materials. The Government will reproduce the report of findings and provide the Contractor ten copies plus one copy for each individual associated with the project for their personal use. The report shall be in the format used by American Antiquity and shall be suitable for publication. In addition, the final report shall conform to the following standards:

(1) Typed on paper measuring 8 x 10-1/2 inches, except for fold-out maps, charts, or other illustrative material.

(2) The text and line drawings shall be clean, clear, and easily reproducible.

(3) Photographs shall be original black and white positive prints, or high-quality reproductions.

(4) The typescript shall be single spaced.

(5) All pages shall be numbered in sequence.

(6) Form NTIS-35, available from the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161 shall be inclosed with each volume of the report.

d. The report of findings shall contain the following:

(1) Photographs of the archeological sites, representative materials recovered during the work, and the various stages of testing.

(2) Maps as previously described using USGS 7-1/2-inch quad sheets as a base.

(3) A discussion of the site inspected.

(4) Copies of all correspondence pertaining to the review of the draft report. These are to include the comments of the Iowa State Historic Preservation Officer and the National Park Service, and responses to any pertinent comments.

(5) Recommendations for material preservation and interpretation.

(6) An abstract not exceeding 250 words authored by the project director/principal investigator. (If the project director is not the principal investigator, then the abstract and a review of the report shall be authored by the project director and included as a preface to the report.)

(7) A glossary of technical terms.

(8) Description of the study area.

(9) A review of references utilized in the background research.

(10) A discussion of the field methods.

(11) An evaluation of the resources examined.

e. The background materials will be considered confidential and therefore, shall accompany the letter of transmittal instead of being included in the report. The background material shall include the following:

(1) Detailed locational maps of the site inspected. USGS 7-1/2-inch quad sheets are recommended for base maps.

(2) Survey forms for any newly recorded sites discovered incidental to this contract.

(3) Summary listing of the materials recovered.

f. A Certificate of Authenticity from a recognized expert not employed by the Contractor, attesting to the validity of the materials recovered, shall be attached to the letter of transmittal for the final report.

END

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